NOV. 1940

COTTON

SERVING THE Textile Industries

"We've quit passing the hat at our plant, Jim. The Provident plan takes care of Employees when emergencies arise."

"Wish we had a plan like that. I'm going to talk it over with the others right away."

and this has been going on

LIBRARY OF CONGRESS
NOV 27 1940
PERIODICAL DIVISION

for over a Half-Century!

Thus a Satisfied Employer Tells Another

about the Provident "HUMAN SECURITY" Group Protection program that—without premium cost to the Employer—is aiding Employees meet such emergencies as these →

HUMAN SECURITY

- Death in family
- Loss of time due to accident or sickness
- Hospitalization or operation when necessary
- Aiding dependents upon death of employee
- Maternity benefits

HUMAN SECURITY

Does your Plant have the benefits of a Complete "Human Security" program? A survey of your needs will be made gladly, without obligation.

PROVIDENT
LIFE AND ACCIDENT INSURANCE COMPANY

CHATTANOOGA — Since 1887 — TENNESSEE

• *Specialists in HUMAN SECURITY (Emergency Income) Plans for Over a Half-Century* •

Which?

Close the Spread . . .

BETWEEN SHIPMENT AND DUE DATE

Terms . . . be they 30, 60, or 90 days . . . are just figures to the manufacturer using the services of Commercial Factors Corporation. Give your customer his regular terms . . . but make it a cash sale as far as your finances are concerned. By discounting sales, capital now tied up in Accounts Receivable is released to you for the more profitable phases of your business. In addition, we take the credit losses.

Let us show you how it can be done.

COMMERCIAL FACTORS CORPORATION

Fred'k Victor & Achelis, Inc.
Established 1828

Schefer, Schramm & Vogel
Established 1838

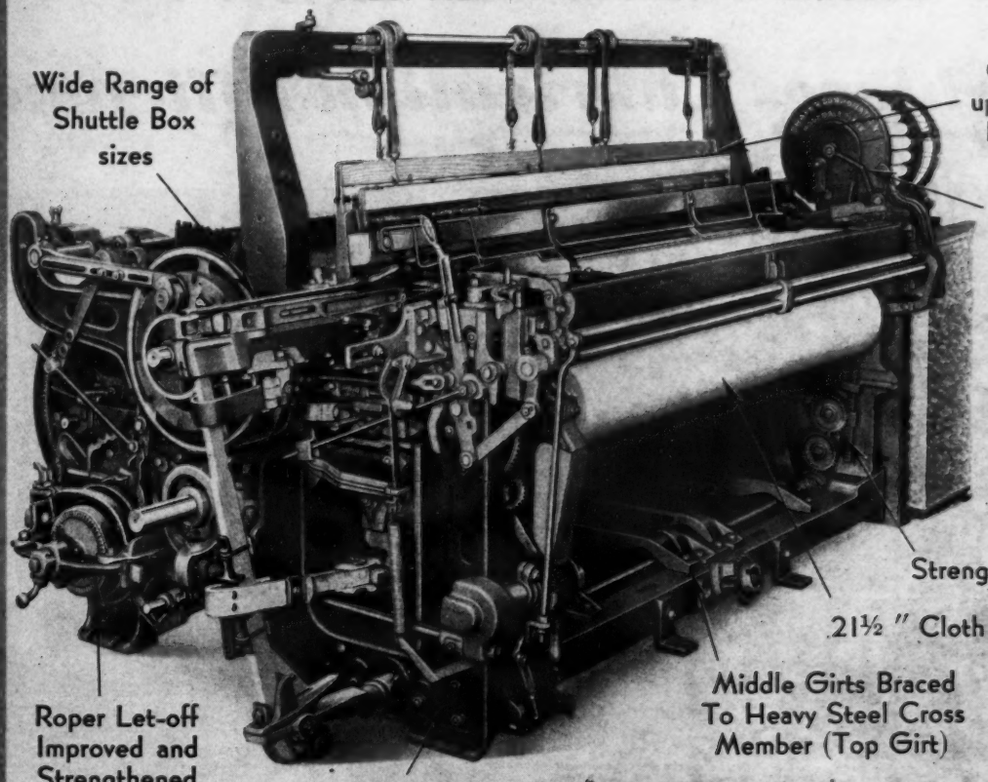
Peierls, Buhler & Co., Inc.
Established 1893

TWO PARK AVENUE, NEW YORK

COTTON is published monthly by W. R. C. Smith Publishing Company, Dalton and Atlanta, Ga., U. S. A.
Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year.
Entered as second-class matter at the Post Office, Dalton, Ga., under the Act of March 3, 1879.

THE NEW DRAPER XP MODEL

FOR HEAVY COTTON FABRICS



Wide Range of Shuttle Box sizes

Cam or Dobby up to 20 Harness 15/32" Gauge

Hopper Stand Reinforced, 4-bolt Foot

Runs 20% Faster

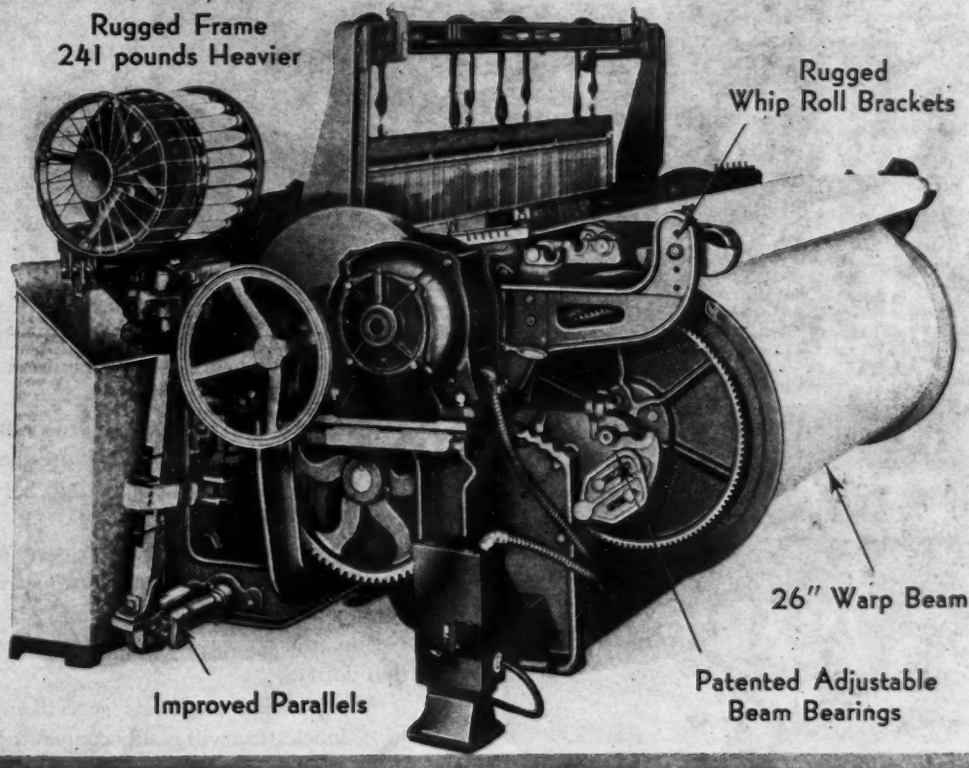
Strengthened Take-up

21½ " Cloth Roll Space

Middle Girts Braced To Heavy Steel Cross Member (Top Girt)

Roper Let-off Improved and Strengthened

Rugged Frame 241 pounds Heavier



Rugged Whip Roll Brackets

From Narrow Sheeting to Light Duck Widths up to 72"

26" Warp Beam

Improved Parallels

Patented Adjustable Beam Bearings

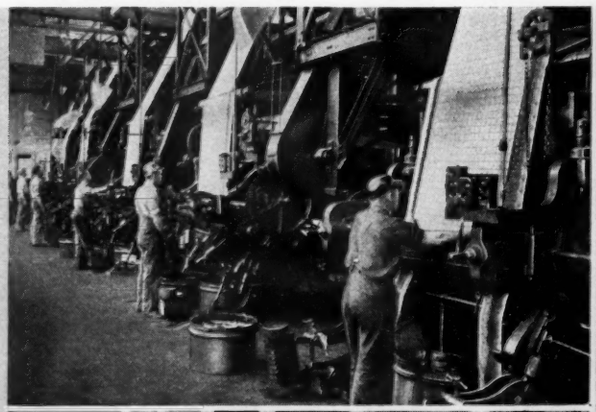
DRAPER CORPORATION

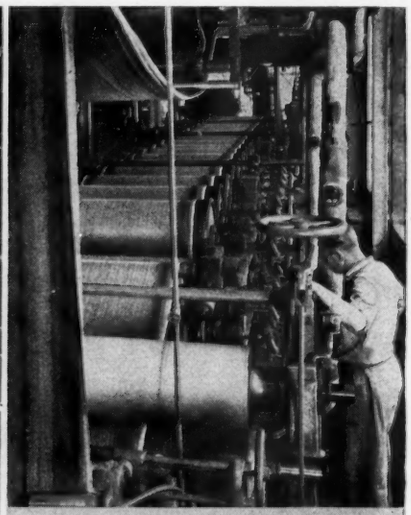
Atlanta Georgia Hopedale Massachusetts Spartanburg S C

WARE SHOALS...

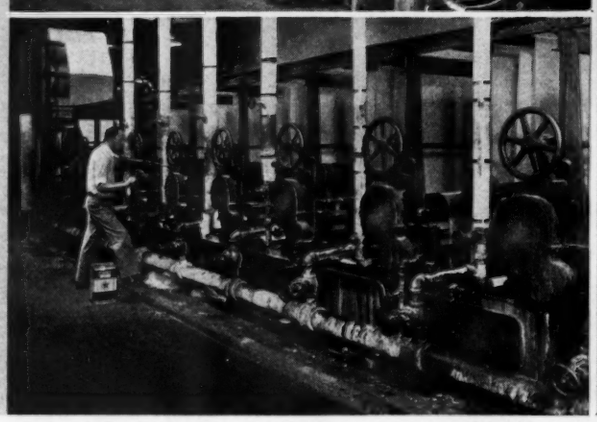
Achieves Lubrication Efficiency

PRINT ROOM. These print machines are Texaco lubricated throughout. On mandrels . . . *Texaco Gresak* is used . . . on open gears and chains...*Texaco Crater.*





OPEN SOAPER in finishing department where gear and general lubricants are Texaco. In the rubber squeeze roller bearings, an outstanding job of sealing out dirt and water and keeping down wear is being done by *Texaco Marfak.*



DRY CANS are lubricated throughout with Texaco.

Riegel COTTON TO COUNTER

TEXACO DEALERS INVITE YOU to enjoy Fred Allen in the new full-hour program of The Texaco Star Theatre . . . with Kenny Baker, Al Goodman's Orchestra and a great cast. Every Wednesday Night, Columbia Network. 9:00 E.S.T., 8:00 C.S.T., 10:00 M.S.T., 9:00 P.S.T.

TEXACO
Textile Mill Lubricants

TEXACO REG. T.M.

FOR 15 YEARS Ware Shoals Mfg. Co. has been saving power, preventing spoilage caused by oil spattering, keeping maintenance costs to a minimum . . . throughout their entire operations.

Ever since 1925 this "Cotton-to-Counter" manufacturing organization has enjoyed the many money-saving benefits of Texaco Engineering Service and Texaco Textile Lubricants.

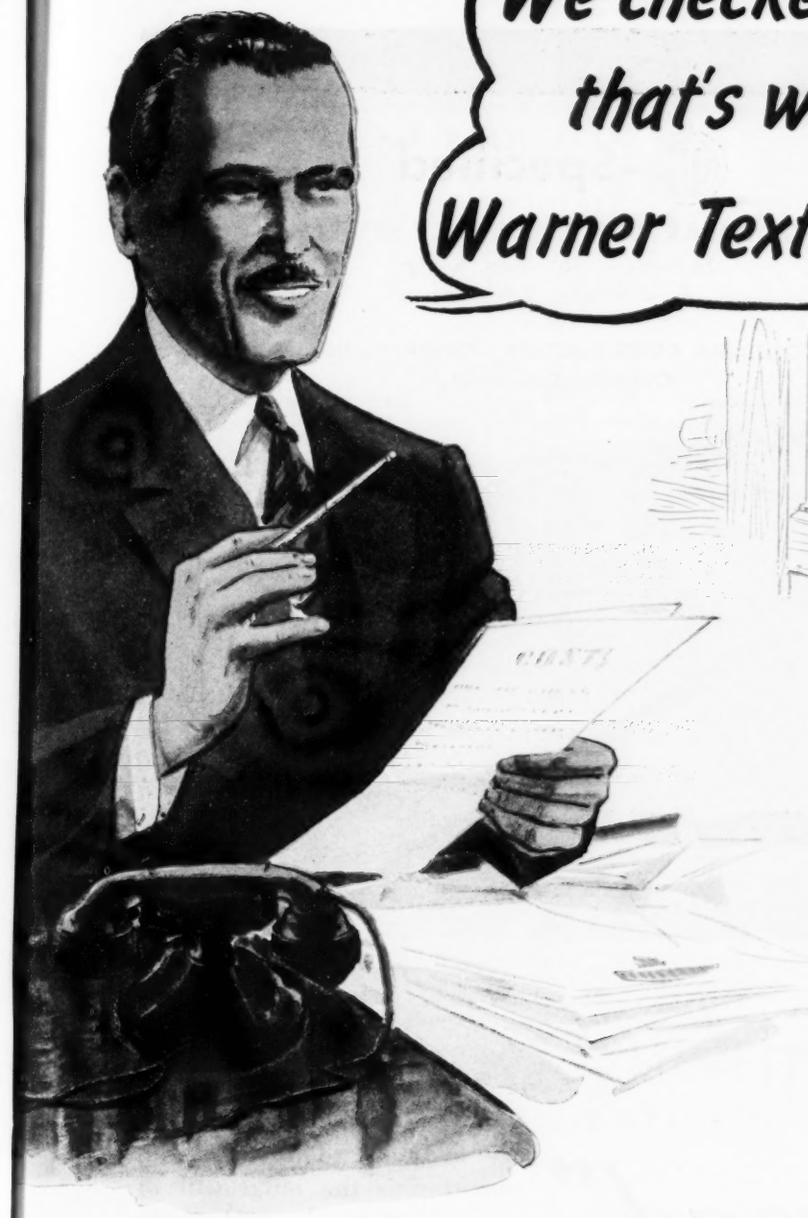
Departmental operating executives say they have lowered maintenance costs and improved machine performance by lubricating with Texaco.

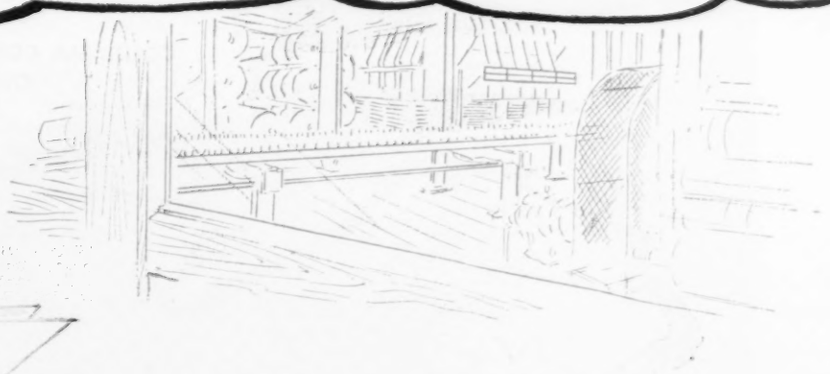
You, too, can get this kind of service for your lubrication dollar.

Trained engineers specializing in textile mill lubrication will gladly cooperate in making savings with Texaco Textile Lubricants in your mill. Phone the nearest of more than 2300 Texaco warehousing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

We checked results on all types that's why we're now using Warner Textile Grade Caustic Soda





Prominent users of Warner Caustic Soda report complete satisfaction.

Warner Caustic Soda is low in iron, low in salt, and low in turbidity.

Warner Caustic Soda is furnished in standard 50% and 70% concentrations – as well as in 73% concentration shipped in specially lined tank cars. Also flake or solid.

Why not check economy, results and service by ordering a car for prompt shipment?

WARNER TEXTILE GRADE CAUSTIC SODA

Tetra Sodium Pyrophosphate		Carbon Tetrachioride
Phosphoric Acid		Trichlorethylene
Sodium Phosphates		Perchlorethylene
Bromine		Carbon Bisulfide
Liquid Caustic Potash		Sodium Sulfide
Chlorine, Liquid	Epsom Salt	Hydrogen Peroxide

CHEMICAL WARNER COMPANY

DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

A "Rubber Railroad"

10 MILES LONG!

—world's lowest-cost transportation system

WHAT you see here is just one link in one of the world's most spectacular engineering feats—the longest conveyor belt transportation system ever built! Ten miles long in all, this giant "rubber railroad" is the main line for transporting construction supplies to the great Shasta Flood Control Dam. Designed by the G.T.M. —Goodyear Technical Man—it beelines across wastelands, bridges rivers, climbs over a range of hills 1,350 feet high, carrying a peak capacity load of 22,000 tons per day. In four years it will deliver 10,000,000 tons of sand, gravel and crushed stone—*at far lower cost per ton than any other haulage method!* This mammoth conveyor is the outgrowth of other historic installations ranging from one to five miles in length that have proved the unrivaled economy of belt transit in handling huge tonnages over terrain where other transportation does not exist or costs prohibitively. If you have such a problem, consult the G.T.M. Write Goodyear, Akron, Ohio, or Los Angeles, California—or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

THE GREATEST NAME IN RUBBER
GOODYEAR

NEW

THE MOST IMPORTANT DEVELOPMENT IN TEXTILE MACHINERY FOR YEARS IS NOW OFFERED

THE WHITIN-SCHWEITER AUTOMATIC FILLING BOBBIN WINDER*

THE FIRST FULLY AUTOMATIC, INDEPENDENT SPINDLE FILLING BOBBIN WINDER THAT HAS BEEN MADE AVAILABLE

It is suitable for cotton, woolen, worsted, linen, rayon, silk or other textile materials.

This machine will handle wound cones, tubes, dyehouse packages, roving, spinning or twister bobbins, as desired.

Speeds are from two to three times those used on non-automatic filling winders, with a very large increase in production.

The independent spindle gives higher efficiency, eliminates partially wound bobbins.

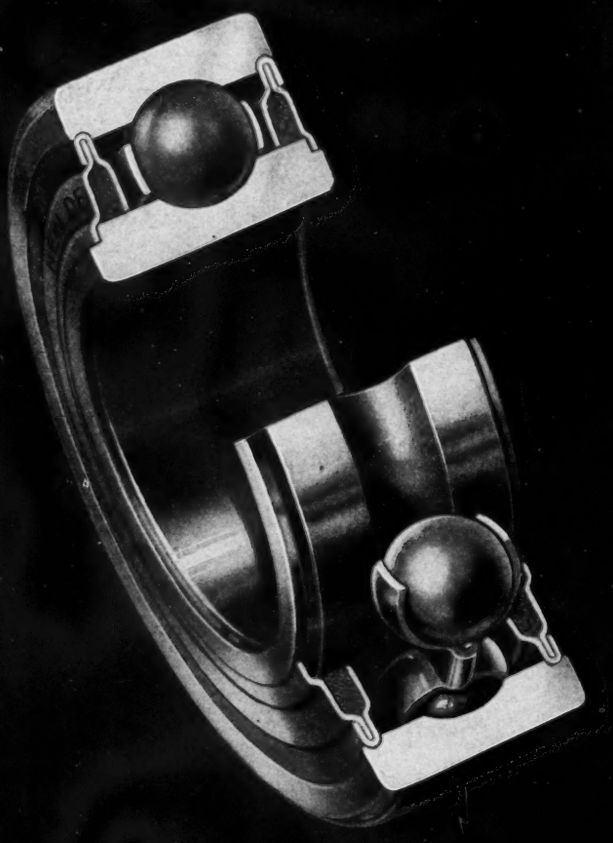
Magazine creeling saves machine stoppages, production losses.

Winding costs are greatly reduced. Better yarn preparation.

*(MANUFACTURED UNDER EXCLUSIVE LICENSE BY WHITIN MACHINE WORKS)

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. **ATLANTA, GA.**

Keep In . . . Keep Out



More than 25 million New Departure Self-Sealed Bearings have been used, because they . . .

KEEP IN	KEEP OUT
lubricant	dirt
endurance	friction
accuracy	wear

Also . . . they simplify machine design and reduce costs

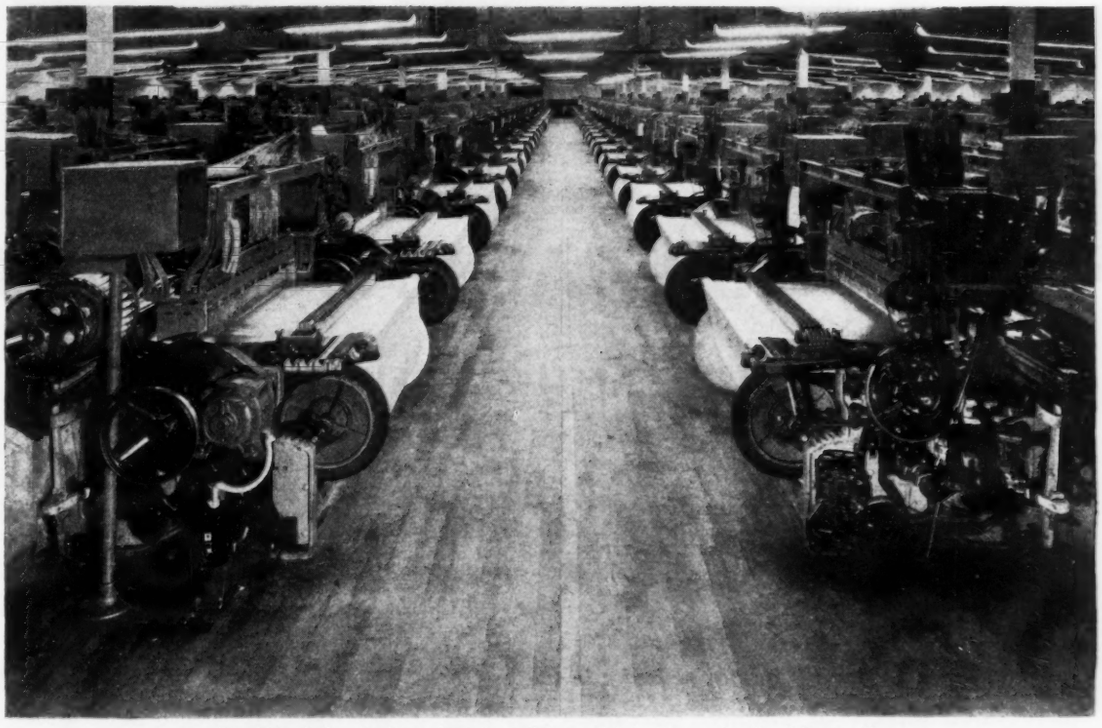
NEW DEPARTURE

SELF-SEALED BALL BEARINGS

NEW DEPARTURE - DIVISION OF GENERAL MOTORS - BRISTOL, CONNECTICUT - DETROIT - CHICAGO

EXPERIENCE SAYS:

"Better Choose Northern Hard Maple"



Hard Maple floor in this modern plant of Carter Fabrics Corporation, South Boston, Va.

Hard Maple in plants built in the 80's—Hard Maple in plants built last week!

Why? Because this superior flooring proves itself under all conditions the most satisfactory flooring for mills. The older your plant, the more proof you've had of its lasting economy. The more *modern* your plant, the more you want Maple.

For only Hard Maple combines so many advantages. *Protects workers*—its resilient comfort retards fatigue; its dry warmth and sanitation guard health. *Protects machinery*—creates no dust to injure delicate bearing surfaces. *Speeds up traffic*—both trucks and men move faster with less effort on this smooth-surfaced floor.

Lowers service costs—properly finished, brushing alone cleans Maple; it doesn't catch lint. Maintenance is easier, because Hard Maple doesn't sliver or splinter; offers unequalled resistance to abrasion, even under the wear of heavy trucks. Simplifies alterations, too.

On all counts Maple is modern. Specify trademarked **MFMA** Maple, and make sure of all *Northern Hard* Maple, and strict association grading. In strips or blocks—*ask your architect.*

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

See our Catalog data in Sweet's, Sec. 11/7e. Write for leaflet on heavy-duty finishes for old or new floors.

Floor *with* MFMA Maple

REG. U. S. PAT. OFF

(NORTHERN HARD)

TO PREVENT MILDEW

NAPENIZE

YOUR CANVAS PRODUCTS

THE POSITIVE ANTI-MILDEW TREATMENT

The new NAPENIZE* process, developed by The Dow Chemical Company, completely overcomes mildew, the common enemy of canvas products.

NAPENIZE your canvas products and you will no longer be troubled by the destructive effects of mildew. Because of its physical affinity to the cloth, this treatment assures a more nearly permanent protection for canvas products than has hitherto been available.

No waterproofing is required to retain the effectiveness of the treatment during exposure to the elements.

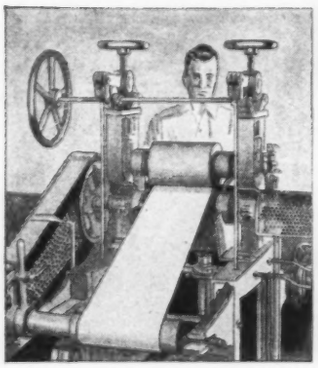
To NAPENIZE is to give your product far longer life. The treatment is easy to apply; the cost is low. Here is a development of vital importance to you. Write for complete information.

*Pat. applied for

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

Branch Sales Offices: New York, St. Louis, Chicago, San Francisco, Los Angeles, Seattle

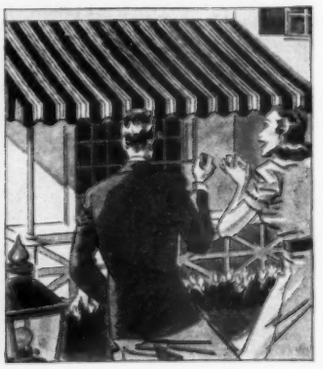
EASY TO APPLY



NO LOSS OF TENSILE STRENGTH

INEXPENSIVE TO BUY

CUSTOMER SATISFACTION



★ CANNON MILLS

★ GREENWOOD COTTON MILL

★ PACIFIC MILLS

★ NAUMKEAG STEAM COTTON CO.

★ BIBB MANUFACTURING COMPANY

Preferred

BY THOSE BEST KNOWN

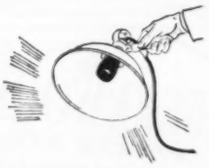
The products represented by these well-known trademarks have added to the home comforts of nearly every American family. They are of outstanding quality — and Saco-Lowell Controlled Draft Roving and Better Draft Spinning Equipment has been used in their manufacture.

Mills such as these do not make far-reaching decisions hastily or haphazardly. The outstanding efficiency of the Saco-Lowell Drafting units — with their effective fibre control over long-range drafts (regardless of the cotton being processed) — had a definite appeal to these successful manufacturers.

To mills—large or small—Saco-Lowell Controlled Draft Roving and Better Draft Spinning has proved a profitable well-planned investment. We will gladly give you further interesting facts.

SACO-LOWELL SHOPS

60 BATTERYMARCH ST., BOSTON, MASS., CHARLOTTE, N. C., GREENVILLE, S. C., ATLANTA, GA.



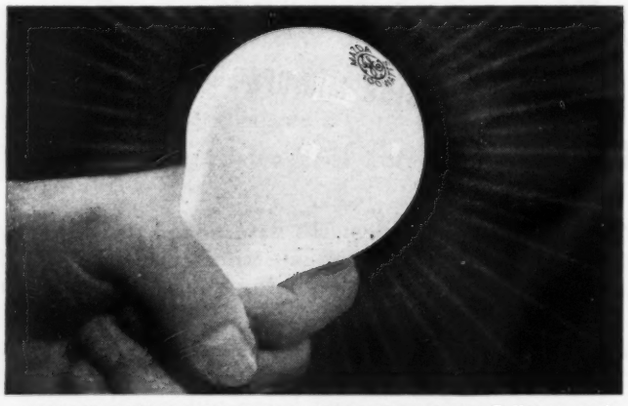
BLACK LIGHT BAGS CROOKS

Clever forgeries detected by new development of G-E research

1 THE POLICE WERE SURE the check had been tampered with. But it showed no signs of alteration . . . until it was exposed to the invisible "black light" of a special G-E lamp. Under its searching ultra-violet rays, the original name glowed faintly . . . and another clever forger was brought to justice.

2 THE SECRET is that alterations frequently show a different fluorescent character than the original under ultra-violet rays. As a result this lamp has many practical uses. Laundries using black light can mark shirts with invisible ink. One laundry (above) washed 14,000 shirts in a week without error. Is there a place in your business for this "black light"?

3 LIGHT-CONDITIONING this Tennessee textile mill with 750-watt G-E MAZDA C (filament) lamps, improved the lighting 156%! It also increased production, reduced spoilage, promoted cleanliness, bettered the product, and helped prevent accidents. Ask your G-E lamp man or your electric service company how better lighting can help improve your plant.



4 SQUEEZE EXTRA LIGHT FROM A 100 WATT BULB? G-E research is doing it all the time! By improving the filament. By purifying the argon gas inside. And by other improvements in manufacture which make today's 100 watt G-E MAZDA lamp give nearly 50% more light, cost 86% less than same size in 1921. Lamp Department, General Electric Co., Nela Park, Cleveland.

G-E MAZDA LAMPS

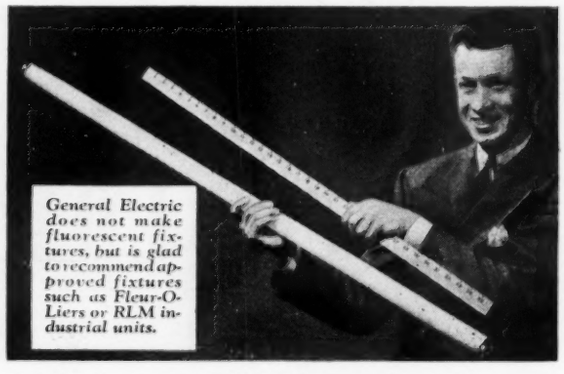
GENERAL ELECTRIC

Year by year, better lamps for every purpose

HOW TO GET YOUR MONEY'S WORTH OF LIGHT!

You may never have occasion to use "black light" in operating your textile plants. But the fact that General Electric makes all types of lamps assures you of obtaining an unbiased lighting recommendation. You owe it to yourself and your employees to find out how important a part better lighting can play in improving your business.

For example, the new fluorescent lighting can help give your mills 50 footcandles or more of cool fluorescent "daylight" or white light using G-E MAZDA F lamps alone or with other types of G-E MAZDA lamps. Phone your G-E lamp man or your electric service company for the facts!



General Electric does not make fluorescent fixtures, but is glad to recommend approved fixtures such as Fleur-O-Liers or RLM industrial units.

THIS IS NO. 24 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

GAINER BELT TENSION (No. 50 Winder)

When mills experiment with the tension on the Gainer Belts, they are usually trying to get a more uniform lay of yarn on the wound package. Sometimes they add old gears and junk iron to the standard 2¼-lb. Weight, and while this may result in some improvement, there is the danger that the increased strain on the belt will result in shorter belt life and in excessive wear on the spindle and cam shaft bearings.

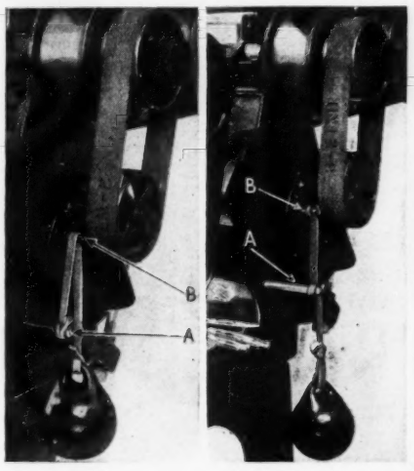


FIG. 1 FIG. 2

Standard arrangement of Cord and Weight shown at left. Variation of standard arrangement is at right — illustrating use of longer Pin.

Mills also experiment with the arrangement of Gainer Frame Weight and Cord. In the standard arrangement (Fig. 1), the free end of the Cord is passed through the Staple (B) on the Gainer Case and around the Pin (A).

Among the variations of this arrangement, by means of which the mills hope to get uniform tension, are the following:

1. An extra wrap is taken around the Staple.
2. An extra wrap is taken around the Pin.
3. The end of the Cord is attached to the Staple, and the Cord is wrapped around the Pin (Fig. 2). A longer Pin is used.

Other mills prefer to replace the Weight and rawhide Cord with a spring connecting the Pin and Staple.

Meanwhile, the cause of the uneven winding may not be variation in belt tension at all. Among the possible causes are these:

1. Gainer Belts may not be all of the same width. The standard belt is one inch wide.
2. Gainer Belts may not be uniform in thickness. Any variation from the proper 1/16" thickness will vary the effective diameter of the pulleys.
3. The Gainer Belts may not be the same material. There is a difference in coefficient of friction between leather and fabric belts.
4. Gainer Belts may vary with changing humidity — particularly over weekends.

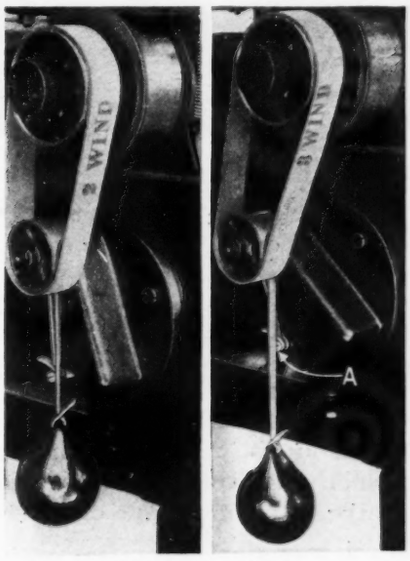


FIG. 3 FIG. 4

Figure 3 shows a "2-wind" Gainer Belt with a "2-wind" Pulley, which is correct. Figure 4 shows a "3-wind" Belt on the same "2-wind" Pulley. This permits the Pulley to drop, and the increased tension will cause extra belt stretch, with ultimate danger of Gainer Case coming in contact with Pin (A).

5. Certain of the Gainer Belts may be oily. All belts should be kept clean.
6. Gainer Belts may not be uniform in length (Figs. 3 and 4). A longer belt allows the Gainer Pulley to drop down further, and the extra leverage from the center of the Gainer Case will add tension to the belt, but as the belt stretches, the Gainer Case may strike the Pin, which will cause an intermittent variation in tension.

NEW COIL SPRING FOR TRAVERSE FRAME DOG LEVER (No. 50 Winder)

Thorough tests of a new coil spring to replace the flat steel spring formerly used on the Traverse Frame Dog Lever, indicate a much longer life.

The new coil spring is attached by means of the same screw used for the flat spring. Since the new spring is located near the top of the Lever, it permits a much better adjustment of the tension on the Dog.

FIG. 5

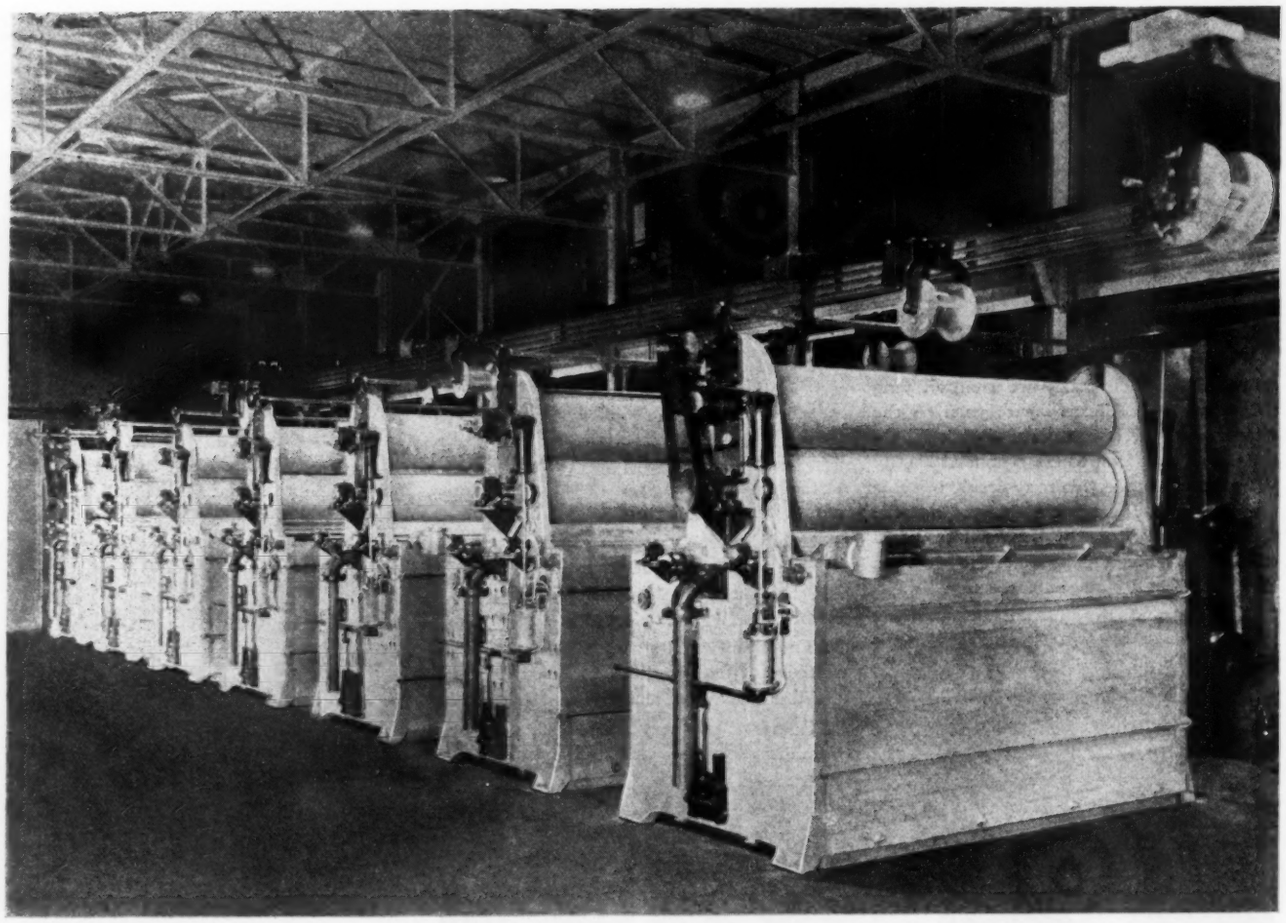
Traverse Frame Dog Lever Spring — Part 50-466-6

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U. S. Pat. Off.



HOW TO SCOUR CLOTH *continuously*

AT 27 TO 40 YARDS PER MINUTE

Installed in one of the largest woolen mills in America, the new Hunter Continuous Washer is scouring diversified fabrics, from blankets to automotives, at speeds ranging from 27 to 40 yards per minute and with a marked economy in use of water and soap.

This new Hunter unit differs from all other known continuous washers in a very important respect. It is this. It may be used either as a continuous range or as 7 or less individual cloth washers which may be used all at one time with 7 different loads, or as few or as many bowls as may be required.

This new unit is relatively low cost in initial expense and is inexpensive to operate. It comes complete with all necessary motors, variable speeds, hydraulic or pneumatic tension for nip rolls, etc. For complete details write to James Hunter Machine Company.

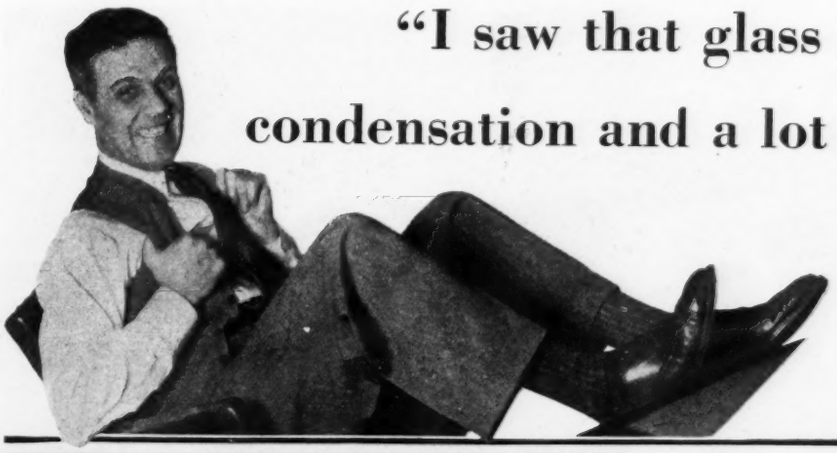
JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

JAMES HUNTER MACHINE COMPANY

FOUNDED 1847 NORTH ADAMS, MASSACHUSETTS

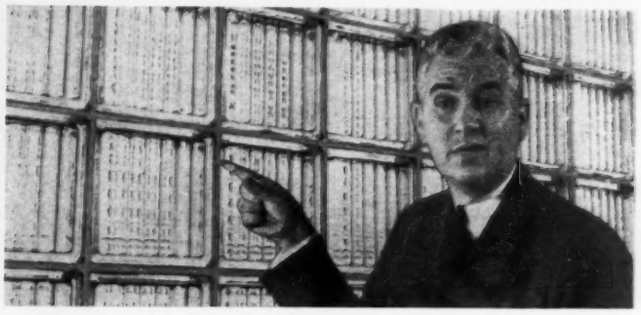
Western Representative
E. G. PAULES
343 Bendix Building
Los Angeles, California

"I saw that glass blocks could lick condensation and a lot of other troubles



. . . that's why the trip through Jackson's mill was the best day's work I ever did."

"CORRODING AND ROTTING SASH have always been a headache for us. Our air is so moist that the condensation of acid atmosphere eats the sash and means a big maintenance bill. Jackson showed me a corroded section of sash in their old mill—then he showed me how they licked that problem in the new plant.



"GLASS BLOCKS REDUCED CONDENSATION and as a result cut the maintenance costs tremendously. Furthermore, there is no sash to rot or corrode in a glass block panel. Neither the blocks nor the mortar joints in the panel are harmed by the acid, humid temperature. That answers a problem I've worried about for years.

"TEMPERATURE AND HUMIDITY CONTROL are easier with glass blocks in place of regular windows. Even when it's cold outside, the air is warm near the inside surfaces of a glass block panel.

"THE CLEANLINESS of that plant astounded me. I leaned on a sill and there wasn't enough dirt to soil my suit at all. No dirt can filter through the sealed panel of PC Glass Blocks. That means less soiled fabrics.

"THE WORKMEN TOLD ME that the plant is a more pleasant place to work, now that they have the big glass block panels. They have natural daylighting, for better inspection and more accurate color-matching."

IN hundreds of plants all over the country, PC Glass Blocks are helping to reduce maintenance costs, improve production and provide better daylighting. Hardly an industry exists that can not benefit from the practical advantages of this modern light-transmitting material.

Before you make any plans for new construction or plant modernization, get the facts about PC Glass Blocks. Write for our big illustrated book which shows how PC Glass Blocks have been used in industrial plants—and how they can help you. Just mail the coupon below.

"PITTSBURGH" stands for Quality Glass

PITTSBURGH PC CORNING

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

Pittsburgh Corning Corporation
2214 Grant Bldg., Pittsburgh, Pa.

Please send me, without obligation, your new book of facts about PC Glass Blocks.

Name_____

Address_____

City_____ State_____

FOR WATERPROOF FABRICS...
use Jacques Wolf LUPOSEC or ACETATE of ALUMINA

TWO TYPES of water-repellents—for *all* types of textile fibres: cotton, wool, silk, rayon, cellulose acetate, linen, etc. Both are economical to use and both are stable. Choose the type that best fits your processing methods.

LUPOSEC

Because of the smooth, supple hand it imparts, LUPOSEC is ideal for finer fabrics. LUPOSEC is a *one-bath* repellent. Eliminates treating fabrics twice —in baths that are not easily controlled. LUPOSEC leaves white goods colorless and odorless, and has minimum effect on dyed shades. Makes colors faster to rubbing, sunlight, washing, etc. LUPOSEC requires no special equipment. It can be applied in either a continuous or batch type machine, and can be mixed with gelatins, gums, and other finishing compounds.

ACETATE OF ALUMINA

Widely used for waterproofing Army and Navy supplies, Jacques Wolf Acetate of Alumina is made by an exclusive process. High in aluminum content—7% Al_2O_3. Low in free acid content. Free of sulphates and sediment.

WOLF BRAND PRODUCTS

JACQUES WOLF & CO.
Chemicals PASSAIC, N. J.

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn.
Midwestern Distributor: Bradley F. Marthens, Milwaukee, Wisc.

FOR MORDANTING

Use Jacques Wolf ACETATE OF CHROME for dyeing mineral khaki and as a mordant for printing steam colors. Acetate of Chrome gives fibres extra affinity for dyestuffs.

Mr. WORRY-WART doesn't live here any more!

He's Mr. Easy-Going Now on Winter Week-Ends

Yeah, Man, No Ends Down Jitters for Me with Dayco Roll Coverings on the Job

Dayco TEMPERED ROLL COVERINGS
Take the Grief out of Winter Shut-Downs

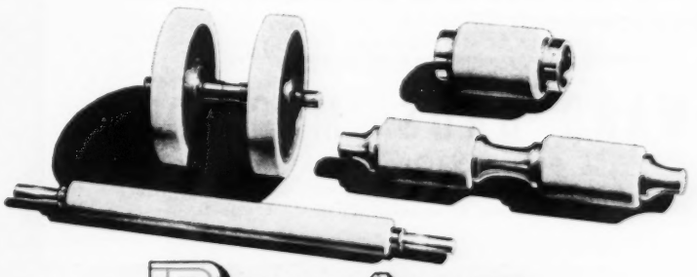
Many a Mr. Worry-Wart in textile mills throughout the nation has learned that Dayco Tempered Roll Coverings take the grief out of winter week-end shut-downs. Daycos eliminate ends down jitters—reduce "down" time and assure instantaneous start-up and top quality production after week-end layoffs. Large and small textile mills know that they can do more and spend less with Dayco Tempered Roll Coverings—the one standard of year-round efficiency by which all others must be judged. So remember, *only Dayco Tempered Roll Coverings* have been proved under the rigorous service conditions of the nation's leading textile mills to *serve longer—give greater finished yarn production*—assure high standard uniform yarn and cost-less-per-month-of-use. Stop worrying—start grinning—go Dayco every day, every year.

THE DAYTON RUBBER MFG. CO.
TEXTILE PRODUCTS DIVISION, Dayton, Ohio
The Originators and Pioneers of Dayco Tempered Roll Coverings

GREENVILLE SALES OFFICE
Woodside Building . . . Greenville, S. C.

HERE'S WHY DAYCO TEMPERED ROLL COVERINGS ARE THE No. 1 CHOICE OF AMERICA'S TOP-FLIGHT TEXTILE MILLS

1. Improved drafting.
2. No grooving—less ends down.
3. Not affected by temperature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Unaffected by hard ends.
9. Static free.
10. Oil resisting.
11. One piece tubular construction.
12. Produce more uniform yarn.



Dayton
Thorobred TEXTILE PRODUCTS
Dayco TEMPERED ROLL COVERINGS—LOOM SUPPLIES
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

TUFFERIZED Card Clothing

U. S. PATENT NO. 2,174,173

Needs Less Grinding and Saves You Money

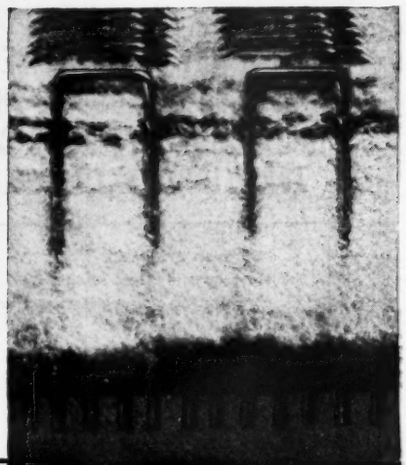
There is little need to grind it when putting it on your cylinders — or as frequently after it is in service. The new patented-precision-process cuts every wire clean and sharp without a wire burr. It seats every wire firmly, accurately and uniformly into the foundation. You receive more production, more uniform carding and better performance with less grinding operations.

Write for additional information or ask our representative

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: **Atlanta, Ga., Gastonia, N. C.** ***Branch Offices:*** **Philadelphia, Dallas**
Canadian Agents: **Colwool Accessories, Ltd., Toronto 2, Canada**



Microphotograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel . . even in length . . spaced uniformly

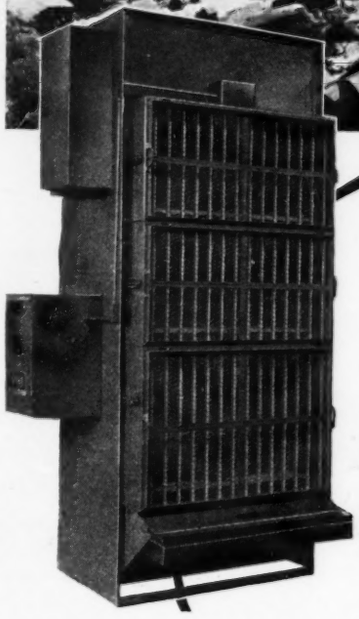
Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

YOU CAN'T *Stop* THE SMOKE-BUT YOU CAN KEEP IT *Out* OF YOUR PLANT

STOP SPOILAGE

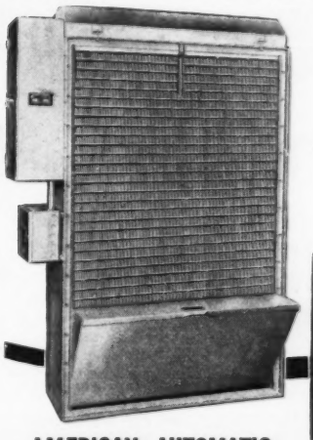
IN DYEING, BLEACHING, FINISHING AND DRYING OPERATIONS

Many textile mills are today finding that losses due to spoilage and returned goods add up to a considerable sum. Most of these losses can be directly traced—in dyeing, bleaching, finishing and drying operations—to smoke, soot and dust which seeps in from outside the mill.



ELECTRO-MATIC AIR CLEANER

Combines electric precipitation as an integral part of an automatic air filter, for highest cleaning efficiency with smoke and fine soot particles. This is the only electro-static filter on the market that is self-cleaning and can be operated continuously over long periods without interruptions or shut downs for maintenance.



AMERICAN AUTOMATIC SELF-CLEANING FILTER

Particularly suitable where large volumes of air are to be conditioned and normal cleaning efficiency is adequate. Positive self-cleaning feature assures maximum effectiveness and eliminates practically all maintenance.

The only economical way to stop streaking and discoloration—and thus eliminate spoilage and returned goods—is by the use of air filters specifically designed for this purpose.

Textile mills that have already installed Electro-Matic Air Cleaners report that streaking and discoloration of their products has been stopped. This is why more and more textile mills are protecting their products with American Air Filters.

A postcard will bring you literature and the address of our nearest engineer—who will gladly consult with you, without obligation.

TYPE PL FILTER

For smaller installations. Dry type, easily maintenanced. Approved by Underwriters' Laboratories. Eliminates practically all dust and some smoke.

AMERICAN AIR FILTER CO., Inc.

Incorporated

734 Central Ave., LOUISVILLE, KY

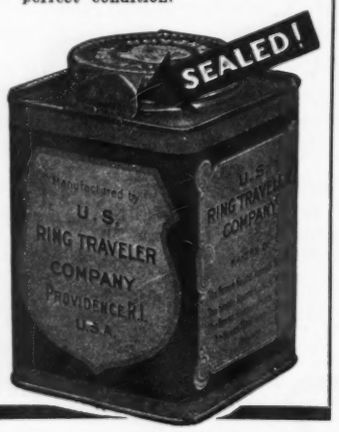
AIR FILTRATION AAF DUST CONTROL

Why DO WE ADVERTISE PRECISION in U. S. RING TRAVELERS?

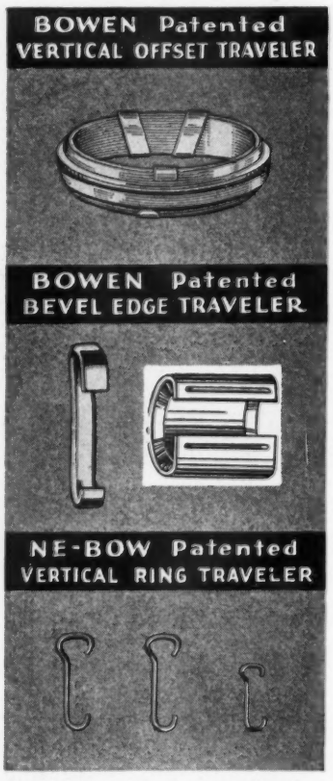
Universal Standard Ring Travelers are sold under the trade names:

- **Bowen Round Point Travelers**
- **Bowen Square Point Travelers**
- **Bowen Improved Vertical Bronze**
- **Bowen Patented Bevel Edge**
- **Bowen Patented Ne-Bow Vertical**
- **Bowen Patented Vertical Offset**
- **Bowen Flat Oval and Round Wire Travelers.**

Sealed metal shipping container protects you by insuring that U. S. products reach you in perfect condition.



Uniformity is absolutely essential to successful spinning and twisting of all fibres. Universal Standard Ring Travelers are manufactured with emphasis on absolute uniformity. The most modern machine tools plus skilled labor insure uniformity of weight and shape. Highest quality steel and bronze alloys are used. They are precisely correct, and you'll want precision in your ring travelers. There is a type of U. S. Ring Traveler for your every spinning and twisting condition. For cotton, worsted, silk, woolen, rayon, jute, and asbestos yarns, and kindred fibres. They are smoothly and uniformly spun. Pictured on the right are a group of U. S. Ring Travelers. They will contribute, more than any other single factor, to a quality product in your mill.



U. S. Ring Traveler Company

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

Sales Representatives:

WILLIAM P. VAUGHAN....P. O. Box 792, Greenville, S. C.
WILLIAM H. ROSE.....P. O. Box 792, Greenville, S. C.
TORRENCE L. MAYNARD....P. O. Box 456, Belmont, N. C.
OLIVER B. LAND.....P. O. Box 158, Athens, Georgia

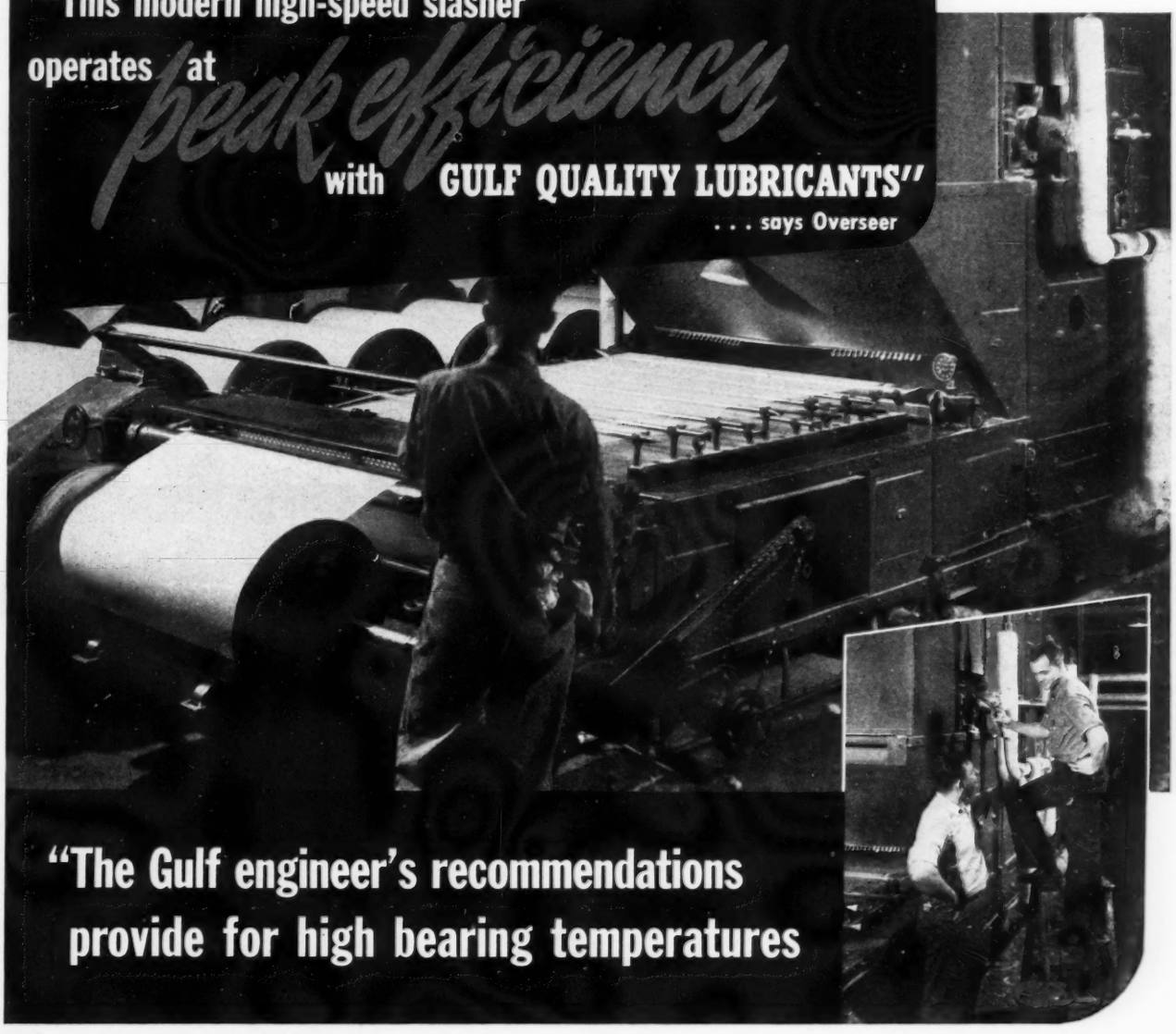
UNIVERSAL STANDARD RING TRAVELERS

U.S. RING TRAVELER CO.

"A Traveler for Every Fibre"

BOWEN PATENTS

"This modern high-speed slasher operates at *peak efficiency* with GULF QUALITY LUBRICANTS"
. . . says Overseer

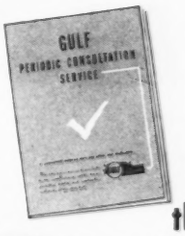


"The Gulf engineer's recommendations provide for high bearing temperatures

"TEMPERATURES run from 220° to 248° in the drying drums of this new high-speed slasher—and the bearings need a lubricant with high resistance to oxidation and gumming," says this Overseer. "That's one reason why we standardized on Gulf quality lubricants, not only for this equipment, but throughout the mill. They give us the extra margin of operating safety we need."

Are you putting up with excessive maintenance costs for your equipment? Gulf's highly trained engineers have helped many mill operators improve their production and increase the efficiency of their machinery. Why not let one of these experienced men consult with your operating people with a view to improving your lubrication and reducing your costs? His suggestions are practical and helpful—and you will be under no obligation.

The complete line of more than 400 Gulf quality oils and greases is quickly available to you through 1100 warehouses located in 30 states from Maine to New Mexico. For prompt service write or phone your nearest Gulf office today.



this booklet will suggest to you a practical method by which you can improve production and reduce operating costs. Write for your free copy.

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation - Gulf Refining Company
3813 Gulf Building, Pittsburgh, Pa. C-
Please send me my copy — no charge — of the booklet "GULF PERIODIC CONSULTATION SERVICE."

Name .....
Address .....
Company .....

Three Ways the CR7008 SAVES

COSTS GO DOWN

1. Simplifies Ordering

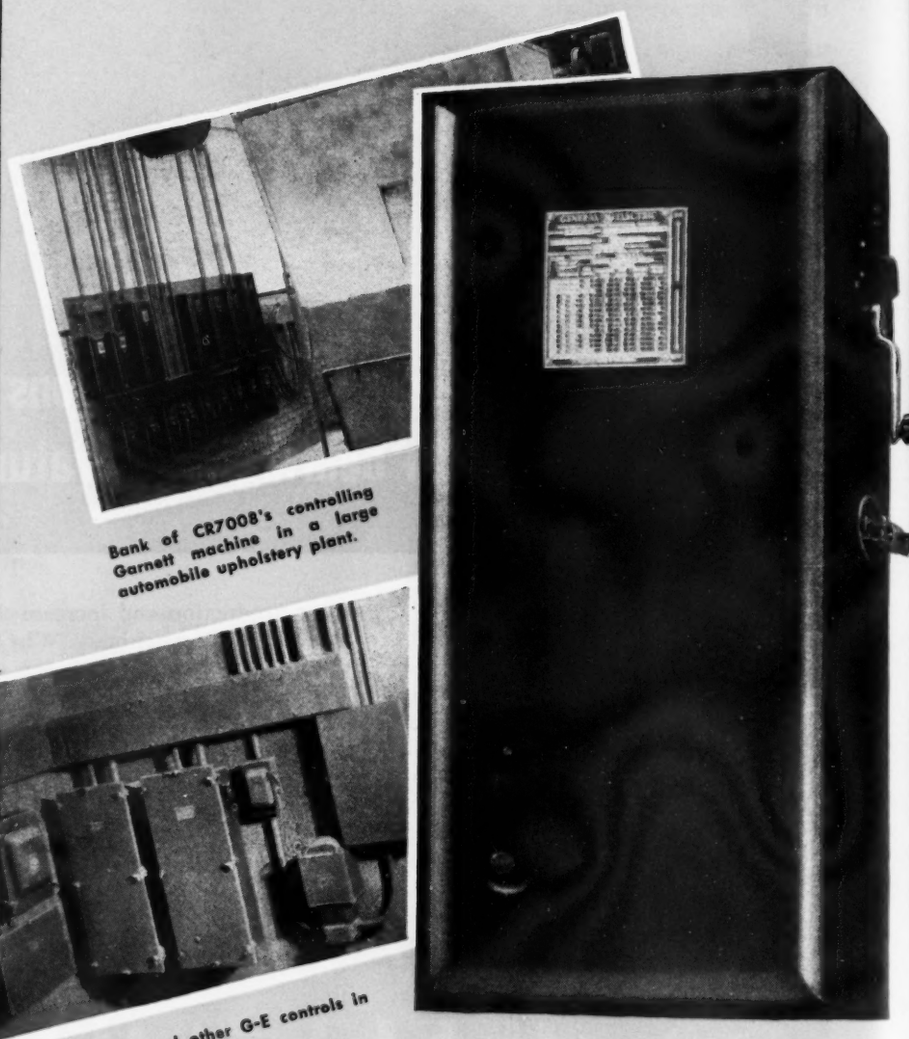
Simply specify the motor rating and indicate the type of disconnect desired—we'll send just the control you need.

2. Facilitates Mounting

When you receive it, it's all wrapped up in a package, ready to deliver to the job, put in place and wire in.

3. Simplifies Wiring

By attaching power and motor leads to well-marked terminals, and connecting to pushbutton, starter is prepared for operation—any man on your crew can do the job.



Bank of CR7008's controlling Garnett machine in a large automobile upholstery plant.

Dust-tight CR7008's and other G-E controls in a Minneapolis grain elevator.

Motor Starter by

SAFETY GOES UP

EVERY TIME YOU INSTALL A G-E COMBINATION STARTER

Mr. Motor User:

WE think you will want to know about a "short-cut" to savings — one that dozens of customers have told us about enthusiastically. They have found that by using our CR7008 combination starters* they effect material savings on the installed cost of control for their motors.

They are also continuing to *specify* these starters because of the extra safety features. Greater protection is provided for operators and equipment. And why shouldn't they have this protection,— the starter that provides it, costs less installed.

HOW YOU CAN LEARN ABOUT THESE SAVINGS YOURSELF

Don't take our word for the economy of using this starter—and for its many other features. Next time you install control for a motor, use a single unit instead of several—make it a G-E combination starter. Keep an accurate record of the cost of the starter *plus* the cost of the installation. Compare that with the cost of buying separate devices, mounting, and wiring them. We'll wager that the CR7008 will prove less expensive. You'll realize a saving, and at the same time get a control that will give you the advantage of *extra safety.* General Electric, Schenectady, N. Y.

*The G-E combination starter consists of a manual disconnect with or without fuses (or a manual circuit breaker) plus a magnetic starter for operation by push-button stations.

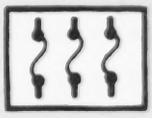
EXTRA Safety for Operators

Cover of enclosure cannot be opened unless manual switch is open and power removed from all but incoming terminals.

Manual switch cannot be closed to apply power as long as cover remains open.

Also You Get

SHORT-CIRCUIT PROTECTION
Fuses or manual air circuit breakers protect against danger due to short circuits.



UNDERVOLTAGE PROTECTION
Prevents automatic restarting after motor shuts down in case of power failure — protects operators.

OVERLOAD PROTECTION
Accurate overload relay protects motor windings against injury due to overheating.

GENERAL ELECTRIC

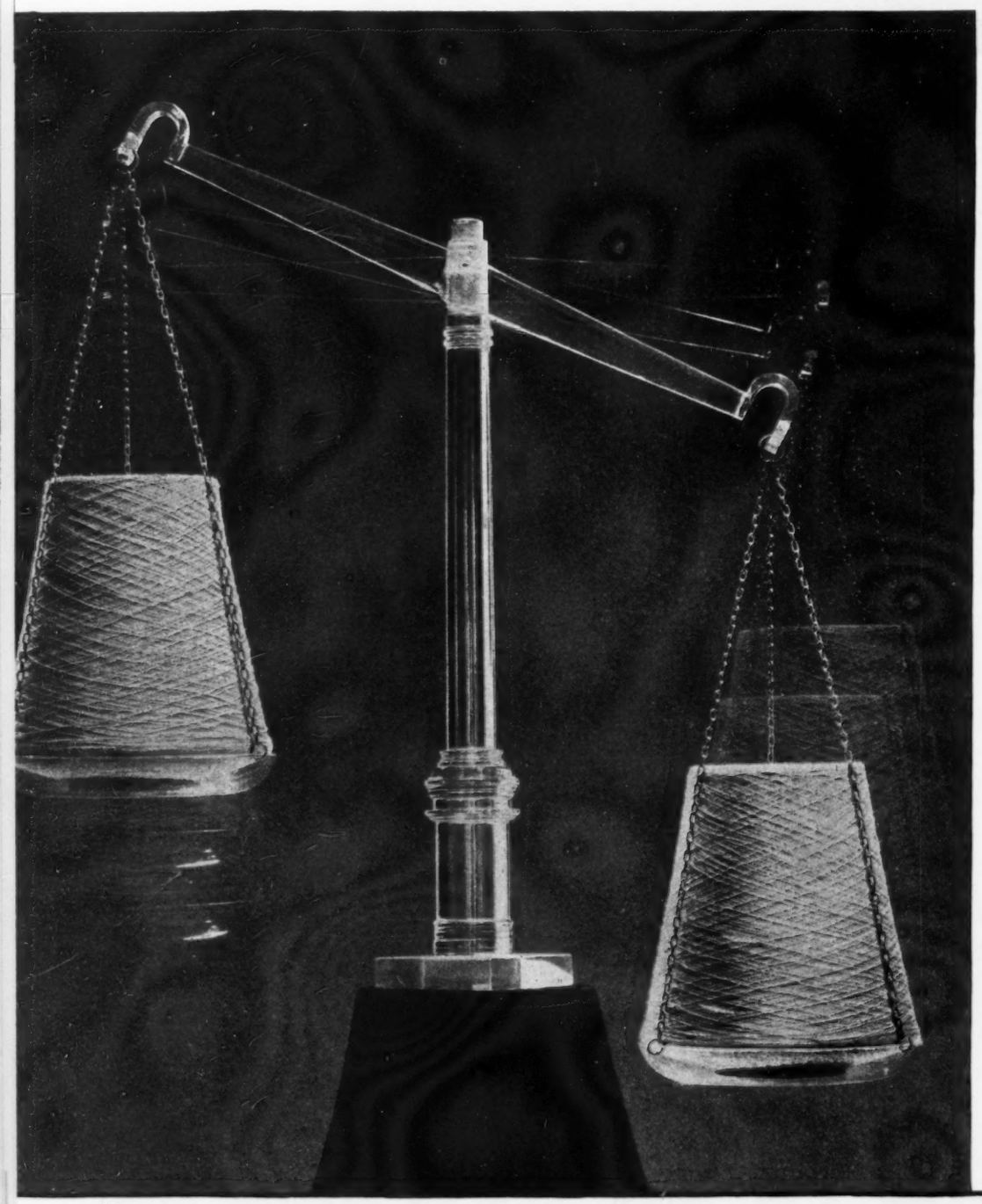
676-8

TRITON W-30
tips the balance...

Two yarn packages immersed for equal periods —one in a TRITON W-30 solution—the other in a solution containing another wetting agent. The TRITON W-30 package tips the balance.

Why? Both agents wet rapidly. But TRITON W-30 *wets through*—more water is absorbed. That's the difference. With TRITON W-30 every fiber of the yarn, even at the core of the package, is thoroughly penetrated.

Tip the balance in your favor. Use TRITON W-30 in dyeing, desizing, finishing, and other wetting applications.

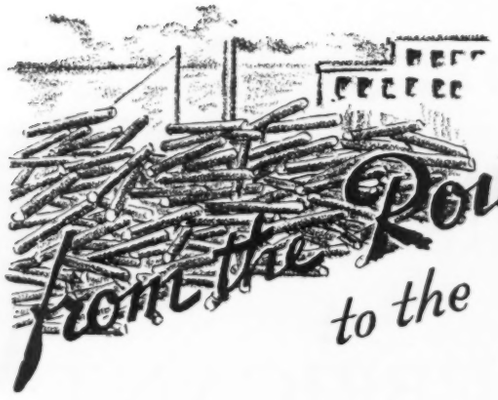


RÖHM & HAAS CO., INC., *222 W. Washington Sq., Phila., Pa.*

"Speeding-up" puts added strain on lubricants—a strain STANDARD OIL LUBRICANTS can stand, as they have *proved* many times heretofore ...After over 50 years' service to the Textile industry, STANDARD OIL LUBRICANTS not only hold old friends but win new ones on *dependability*.

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY



from the Rough to the FINISHED

BACK of Bowen-Hunter Bobbins are careful choice of the best woods with skillful manufacture of bobbins designed to give you every bobbin efficiency.

Here are steps in the manufacture of Bowen-Hunter Bobbins:

1. Only selected woods from Vermont Rock Maple are used.
2. Best seasoning.
3. Drilling and turning are thoroughly checked for accuracy.
4. Bushings, shields and rings are thoroughly checked.
5. Smoothest, most durable finish is effected.

Bowen-Hunter quality bobbins will improve the efficiency in your mill. Naturally modern, money-making mills are specifying Bowen-Hunter Bobbins.

The Bowen-Hunter line includes card room bobbins, automatic loom, filling, warp and twister bobbins.

B H

"True to the Gauge"

BOWEN-HUNTER BOBBIN CO.

East Corinth, Vermont

SOUTHERN REPRESENTATIVES: THE McLEOD COMPANIES, GREENSBORO, N. C., AND GREENVILLE, S. C.

YARMOR 302 DOES TRIPLE DUTY—

—IN DYEING ALL FIBERS

Brighter colors result when Yarmor is used in the dye bath. Triple-action assistance is the reason.

Yarmor* 302 is a penetrant, dispersant, and detergent-assistant—all in one efficient material. This triple-action value of Yarmor shows to special advantage in dyeing.

Proper dyeing is a three-stage process, and Yarmor improves each stage. First, the fibers must be saturated with dyestuff solution, and here Yarmor's excellent penetrating action lowers the surface and interfacial tension of the dye liquor so that it can find its way into the hardest fibers and heaviest seams. Second, the dye must be deposited, and here Yarmor's dispersing action deposits the dyestuff in an even, level manner that gives the proper depth of shade throughout each fiber. Third, loose dyestuff and impurities must be washed away, and here Yarmor suspends the loose dyestuff and impurities so that they can be washed out completely.

Yarmor gives this same triple-action assistance in all wet-processing operations. It is economical and safe for all fibers. Highly efficient, a little does a lot and does it well. Try Yarmor once in your dye bath, and you'll be using it regularly—and for all other wet-processing as well.

Naval Stores Department

HERCULES POWDER COMPANY

994 MARKET STREET, WILMINGTON, DELAWARE

*YARMOR IS THE REGISTERED TRADEMARK FOR HERCULES' BRAND OF HIGHLY-PURIFIED PINE OIL.

YARMOR 302 GIVES TRIPLE ACTION

WETS

DISPERSES

SUSPENDS FOR RINSING

No cotton mill is really modern unless its opening, blending, cleaning and picking departments are as fully modernized as the needs of high speed and long draft equipment demand.

Money spent for modernizing machinery beyond the picker room can never earn its full return unless the preparation of the cotton is right so that the laps on the cards are clean and uniform.

Money spent for good blending, cleaning and picking equipment probably pays better returns for the amount expended than any other invested in a modernization program.

We have specialized in opening and picking room equipment for years and can certainly help to make your picking and opening departments better if they are not now as good as you could wish them to be.

AldricH MachinE

Greenwood, WorkS South Carolina

THE SPEED YOU WANT ...As You Want It!

You Get This Big Money-Saving Advantage When You Use Allis-Chalmers Variable Speed Texrope Drives on Your Spinning Frames!

THERE'S A GOOD reason why scores of leading mill operators have already switched to the use of Allis-Chalmers Vari-Pitch Drives to get variable speeds for their spinning frames. That reason is—*by running their spinning operations at always the correct speeds, they get increased production . . . without increased cost.*

That's why, when Powdrell & Alexander, well-known curtain fabric manufacturers, recently arranged with Saco-Lowell engineers to equip a completely up-to-date spinning plant at Danielson, Conn., one of the fundamental points agreed on was—variable speed power transmission for the spinning frames!

No fixed-speed spinning frames for them! No production delays while sheaves are changed! No lost profits through operation at inefficient speeds! And they achieved all this . . . using Vari-Pitch drives . . . without paying an extra premium in cost!

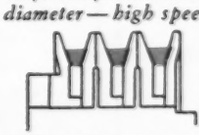
Don't continue to rely on fixed-speed drives! Find out about Allis-Chalmers variable speed drives . . . and how they can profitably fit into your schedule.

To learn details on Texrope equipment for the modern textile mill, get in touch with the transmission engineer in the district office near you. Or write Allis-Chalmers, Milwaukee. A-1309

IN THIS NEW 960-SPINDLE PLANT OF Powdrell & Alexander, Allis-Chalmers Vari-Pitch Drives give them the "speed they want as they want it." Shown with the drives are Allis-Chalmers "Quick-Clean" Lo-Maintenance textile motors and Allis-Chalmers motor controls.

How the Vari-Pitch Principle Works for You!

Adjusted for maximum diameter — high speed.



Adjusted for minimum diameter — low speed.

To get the speed you want, use Allis-Chalmers Vari-Pitch Drives — in capacities from fractional to 150-hp . . . with speed variations of 15 to 25% per sheave! In the stationary control type, speed changes are made by stopping motor and making a simple adjustment of the pitch diameter of the sheaves. In the motion control type, pitch diameters are adjusted while sheave is in motion.

Vari-Pitch Speed Changers • Texrope V-Belts • Duro-Brace Texsteel Sheaves • Vari-Pitch Sheaves • Standard Cast Iron Sheaves • Adjustable Pitch Diameter Texsteel Sheaves • 2-3-4 Combination Sheaves • Paraline Automatic Motor Bases • Oil Field Drilling Rigs.

Belts by Goodrich

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN

No cotton mill is really modern unless its opening, blending, cleaning and picking departments are as fully modernized as the needs of high speed and long draft equipment demand.

Money spent for modernizing machinery beyond the picker room can never earn its full return unless the preparation of the cotton is right so that the laps on the cards are clean and uniform.

Money spent for good blending, cleaning and picking equipment probably pays better returns for the amount expended than any other invested in a modernization program.

We have specialized in opening and picking room equipment for years and can certainly help to make your picking and opening departments better if they are not now as good as you could wish them to be.

AldricH MachinE

Greenwood, WorkS South Carolina

THE SPEED YOU WANT ...As You Want It!

You Get This Big Money-Saving Advantage When You Use Allis-Chalmers Variable Speed Texrope Drives on Your Spinning Frames!

THERE'S A GOOD reason why scores of leading mill operators have already switched to the use of Allis-Chalmers Vari-Pitch Drives to get variable speeds for their spinning frames. That reason is—*by running their spinning operations at always the correct speeds, they get increased production . . . without increased cost.*

That's why, when Powdrell & Alexander, well-known curtain fabric manufacturers, recently arranged with Saco-Lowell engineers to equip a completely up-to-date spinning plant at Danielson, Conn., one of the fundamental points agreed on was—variable speed power transmission for the spinning frames!

No fixed-speed spinning frames for them! No production delays while sheaves are changed! No lost profits through operation at inefficient speeds! And they achieved all this . . . using Vari-Pitch drives . . . without paying an extra premium in cost!

Don't continue to rely on fixed-speed drives! Find out about Allis-Chalmers variable speed drives . . . and how they can profitably fit into your schedule.

To learn details on Texrope equipment for the modern textile mill, get in touch with the transmission engineer in the district office near you. Or write Allis-Chalmers, Milwaukee. A-1309

IN THIS NEW 960-SPINDLE PLANT OF Powdrell & Alexander, Allis-Chalmers Vari-Pitch Drives give them the "speed they want as they want it." Shown with the drives are Allis-Chalmers "Quick-Clean" Lo-Maintenance textile motors and Allis-Chalmers motor controls.

How the Vari-Pitch Principle Works for You!

Adjusted for maximum diameter — high speed.

Adjusted for minimum diameter — low speed.

To get the speed you want, use Allis-Chalmers Vari-Pitch Drives — in capacities from fractional to 150-hp . . . with speed variations of 15 to 25% per sheave! In the stationary control type, speed changes are made by stopping motor and making a simple adjustment of the pitch diameter of the sheaves. In the motion control type, pitch diameters are adjusted while sheave is in motion.

Vari-Pitch Speed Changers • Texrope V-Belts • Duro-Brace Texsteel Sheaves • Vari-Pitch Sheaves • Standard Cast Iron Sheaves • Adjustable Pitch Diameter Texsteel Sheaves • 2-3-4 Combination Sheaves • Paraline Automatic Motor Bases • Oil Field Drilling Rigs.

Belts by Goodrich

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN

THE LEADING MANUFACTURERS OF TEXTILE EQUIPMENT . . . . .

have signed contracts and will display standard and improved installations, machinery, accessories, building, operating and office supplies, primary and fabricating materials, and parts at the

14th

SOUTHERN TEXTILE EXPOSITION

• MARCH 31 to APRIL 5, 1941 •

TEXTILE HALL, GREENVILLE, S. C.

The exhibits will answer any production question for manufacturers of yarn and cloth made of cotton, rayon, silk, and wool.

To meet competition successfully textile plants must continuously make replacements and improve equipment. It is essential to the prosperity of any mill that representatives of its financial and operating personnel attend the Exposition.

Our rooms Committee will see to it that all who attend the Exposition will be able to obtain comfortable quarters. Executives and Department Heads who do not receive tickets may obtain them upon request.

NOTE: This Exposition is exclusively for the textile industry. Due to the large attendance and crowded aisles, it is regretted that children under sixteen years of age cannot be admitted.

Courtesy
Rosenbach Galleries
Philadelphia

Unmistakable Identification

THE marks of famous craftsmen help to appreciate the values of those rare beautiful articles whose quality perpetuates them for posterity. For those articles of apparel which require constant replacement, the marks of the makers guarantee value, identify quality, build the kind of consumer confidence which helps perpetuate mercantile successes for generations. Unmistakable identification for your merchandise is most economically, most attractively provided by Kaumagraph* Dry Transfers, Prestomarks, Embossed Seals and Lithographed Packing.

Identification Headquarters –

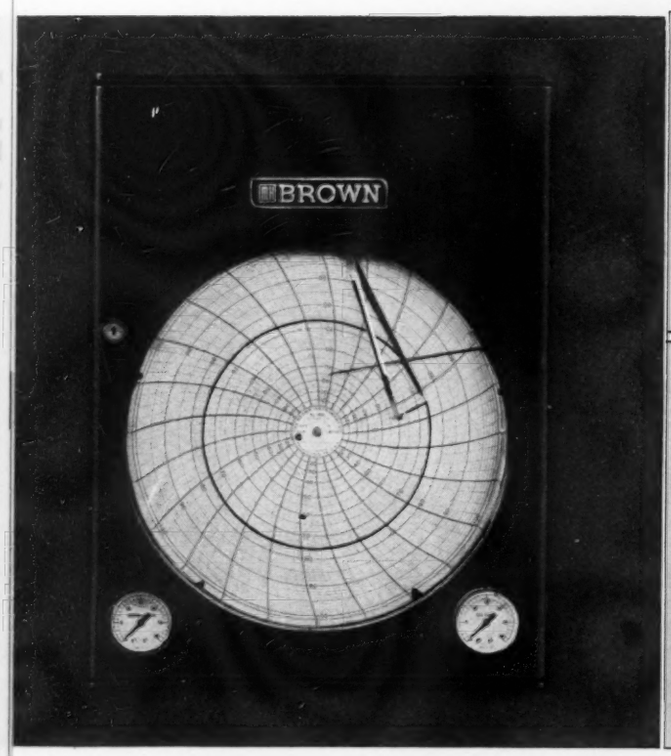
KAUMAGRAPH
16-22 E. 34th St., New York

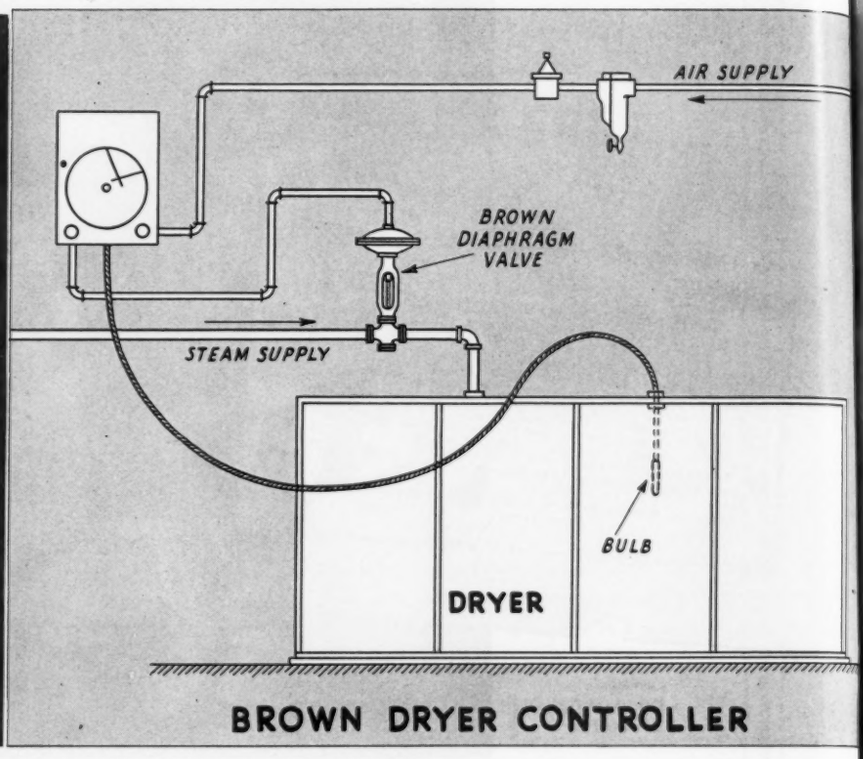
**Trade Mark Registered U. S. Patent Office*
"Kaumagraphs" are made only by Kaumagraph Company

KAUMAGRAPH DRY TRANSFERS

General Offices and Plant, Wilmington, Delaware • Representatives in Principal Textile Centers of the World

Assures Uniform Quality in Drying





The above sketch shows how simple and easy it is to install the Brown Dryer Controller.

"Same as last order"—is proof of customer satisfaction and a demand for uniform quality.

A change of a few degrees in temperature is a vital factor in holding customers. In drying textiles, too high a temperature makes the goods harsh and will destroy luster and color—too low a temperature means either that the goods is not properly dried or else unnecessary extra time was required to dry it.

The way to insure uniform quality is to maintain automatically a constant temperature in the operation of can, tenter, skein, loop and stock dryers. By holding temperature at the desired control point a substantial steam saving can also be effected.

Better quality, from uniform drying and lower costs, are among the advantages derived from the installation of Brown Recording Thermometer Controllers.

To avoid harshness or wet spots, you can rely on their precision and be confident of the dependability of Brown Thermometer Controllers to hold temperature constant.

Brown Recording, Indicating and Controlling Thermometers, due to their responsiveness, simplicity and flexibility more than meet the fast-growing demands for better temperature control in the textile industry.

Twelve-inch chart records from Brown Recording Thermometer Controllers are invaluable aids which enable operators to duplicate and standardize quality in the drying process.

Furnished in universal, rectangular cases, suitable for wall, front-of-board or flush mounting.

Send for Catalog No. 9304

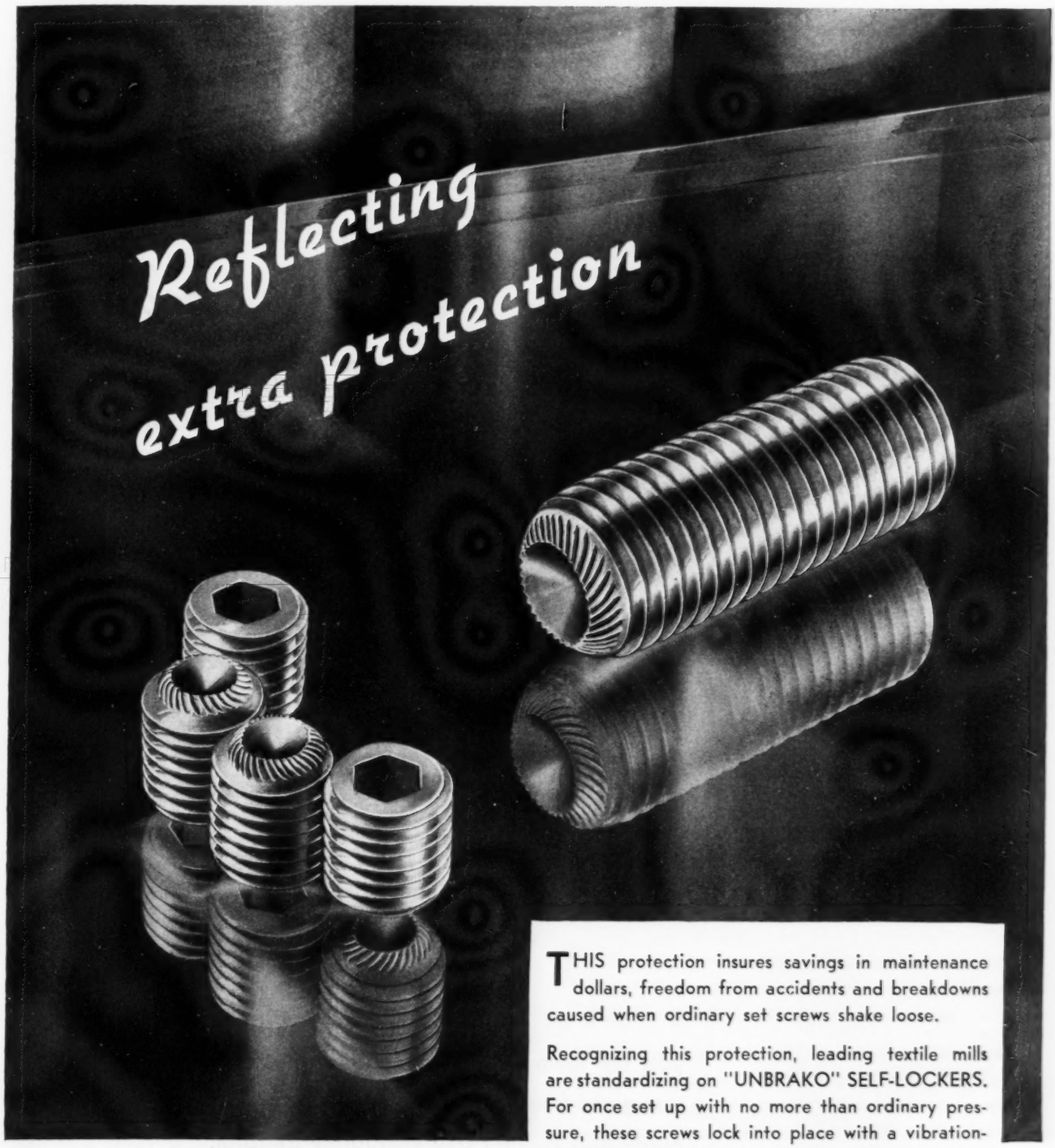
This catalog fully describes the complete line of Brown Instruments and Minneapolis-Honeywell Controls for measuring and controlling moisture content, size cooking, bleaching, mercerizing, dyeing and other textile processes. Write

THE BROWN INSTRUMENT COMPANY
A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.
4492 Wayne Avenue, Philadelphia, Pa.

Offices in all principal cities. Toronto, Canada: 117 Peter Street — Amsterdam-C, Holland: Wijdesteeg 4 — England: Wadsworth Road, Perivale, Greenford, Middlesex — Stockholm, 16, Sweden: Nybrokajen 7.

BROWN THERMOMETER CONTROLLERS
and
MINNEAPOLIS-HONEYWELL CONTROL SYSTEMS

To Measure and Control is to Economize



THIS protection insures savings in maintenance dollars, freedom from accidents and breakdowns caused when ordinary set screws shake loose.

Recognizing this protection, leading textile mills are standardizing on "UNBRAKO" SELF-LOCKERS. For once set up with no more than ordinary pressure, these screws lock into place with a vibration-defying grip! Yet removal or adjustment is a cinch, and "UNBRAKOS" can be used over and over again with the same dependability.

Such unfailing advantages can't help but provide trouble-free operation where ordinary set screws may not be reliable. Investigate "UNBRAKO" now . . . details without obligation.

Reg. U. S. Patent Office

UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS with the Knurled Points

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. 10x582

BRANCHES
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

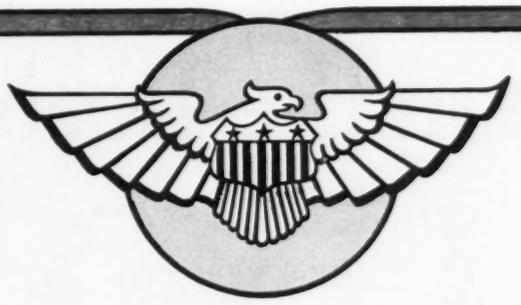
● You'll be "sold" on Staley Textile Starches too, when you try them and find you get the exact grade of starch that gives you exactly the results you want—and that both grade and quality stay absolutely uniform.

We could print a lot about Staley experience, laboratories, cooperation, service and so forth—but YOU want the BEST STARCHES. "SURE—STALEY'S."

A. E. STALEY MANUFACTURING CO.

DECATUR, ILL.

ATLANTA PHILADELPHIA DALLAS NEW YORK
SPARTANBURG SAN FRANCISCO CHICAGO BOSTON



THE WAR WILL BE WON IN AMERICA'S FACTORIES

★ ★ ★ ★

Is your Power Transmission System Speeded Up To PREPAREDNESS Production?

★ ★ ★ ★

Textiles will play an important part in Uncle Sam's defense program . . . Modern improvements—to speed up production—can be made to pay for themselves now with the increased orders in view. . . . Our engineering department will be glad to make a survey of your mechanical power transmission system, or any part of it, to see how it can be most economically and effectively speeded up. . . . Your inquiries are invited.

Leather Belting
•
S.B.C. Hairon Round Belting
•
Rubber Belting
•
V-Belt Drives
•
Adjustable V-Belts
•
Rockwood Pivoted Motor Drives
•
Rockwood Paper Pulleys
•
Metal Pulleys

50th Anniversary
1890
1940
SOUTHERN BELTING COMPANY
ATLANTA GA

SOUTHERN *Belting Company*

Manufacturers and Distributors

ATLANTA, GEORGIA

We're in the Business of SELLING YOU LESS OIL!

"GOOD" LUBRICATION just isn't enough today! That's why Socony-Vacuum engineers are trained to go beyond that and help you get *maximum efficiency* from your machines with *minimum oil consumption.*

FIRST OF ALL—the Socony-Vacuum Man is careful to recommend exactly the right oil or grease for each individual machine in your plant. That means you will get a lubricant that's adapted to *limited feeds*... that's designed to give you *reliable, long-term service.*

THEN—in close cooperation with your own operating men—proper systems of application are worked out for each type machine. By using the *"correct" oil,* in the *right place,* at the *right time,* in just the *right amounts*—our man is usually able to help you use less and less oil!

CALL IN Socony-Vacuum for

You'll Profit from these "Exclusives"

☞ **SKILLED LUBRICATION COUNSEL** of a Socony-Vacuum man backed by 74 years' experience... the greatest in the Petroleum Industry.

☞ **A COMPLETE LINE** of Lubricants ... the scientifically correct lubricant for every type of machine you now own ... or will buy.

GARGOYLE VELOCITE OILS HELP KEEP SPINDLES CLEAN!

Gargoyle Velocite Oils stoutly resist oxidation and formation of deposits. They keep spindle blades and bolsters clean for remarkably long periods...help minimize oil drag. The result: low power consumption and minimum wear in spinning frames.

Correct Lubrication

☞ **NEW LUBRICANTS** ahead of new needs . . . developed in close cooperation with machine builders by famous Socony-Vacuum laboratories.

☞ **HALF A MILLION CASE HISTORIES** to guide our engineers in recommending the right use of these lubricants to earn Lubrication Profits for you.

☞ **DISTRIBUTION** throughout the world of high-quality lubricants.

• • •

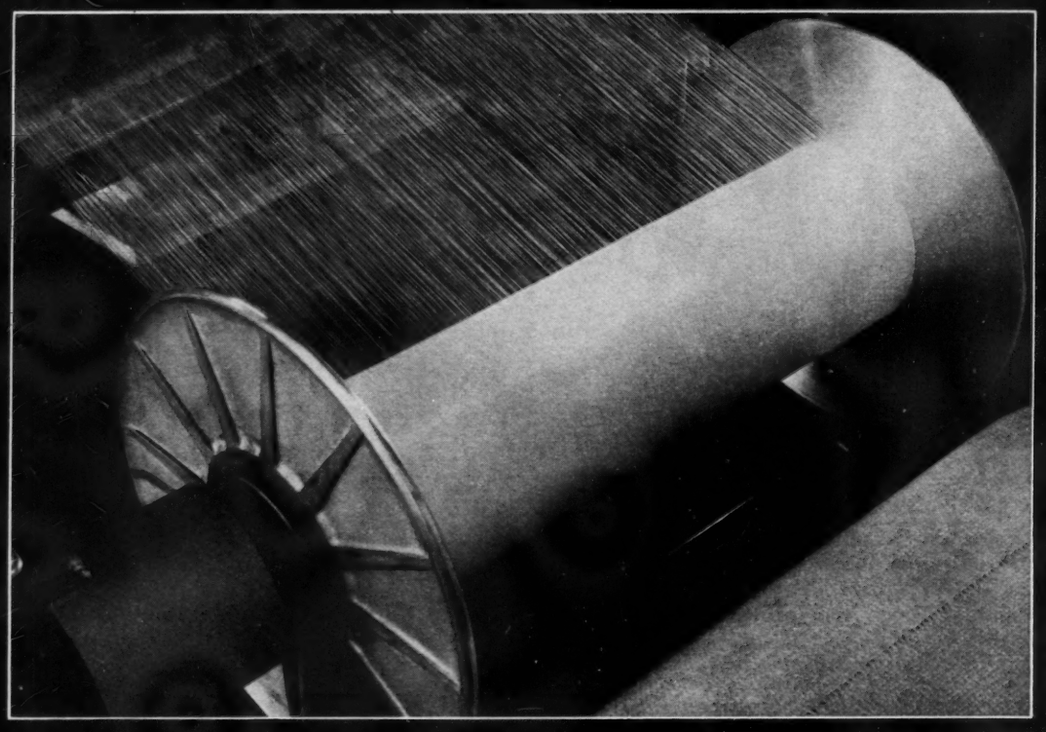
SOCONY-VACUUM OIL CO., INC.
Standard Oil of New York Division • White Star Division • Lubrite Division • Chicago Division • White Eagle Division • Wadhams Division • Magnolia Petroleum Company • General Petroleum Corporation of California

GARGOYLE
Lubricants

MAZLO
Reg.U.S.Pat.Off.

MAGNESIUM ALLOYS

THE LAST WORD IN LIGHTNESS



Winding warp on a Magnesium sectional warp beam at a Van Raalte knitting mill

Fine for yarns of every denier

WINDING warp on a MAZLO Magnesium sectional warp beam is done at speeds never before realized on this operation. The beam runs true, so yarn goes on evenly and comes off that way. You get higher efficiency on production and finer finished fabrics.

These warp beams are very light in weight. (Magnesium weighs only one-fourth as much as iron.) Stops and starts on the machine are smoother, resulting in fewer breaks in the yarn. The job goes faster wherever empty or full beams must be handled in your plant; handling costs are lower. And less dead weight means that you also save on shipping charges.

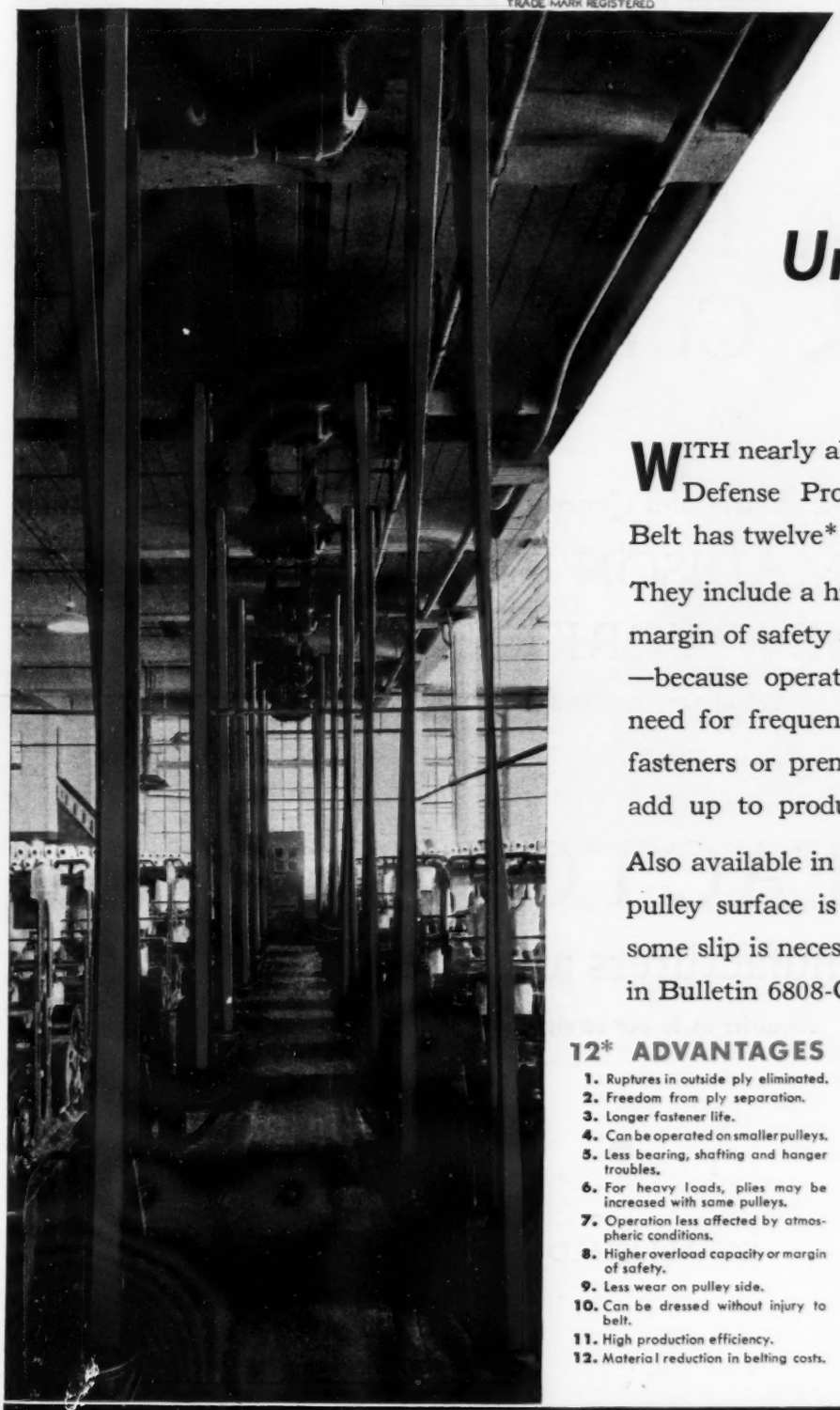
MAZLO Magnesium sectional warp beams have the high strength and rigidity required for perfect performance. This has been proved by thousands of these warp beams now in service. Sales Agent: Aluminum Company of America, 1704 Gulf Bldg., Pittsburgh, Pa.

MAZLO

AMERICAN MAGNESIUM CORPORATION

Condor Compensated Belt . .

PATENTED
TRADE MARK REGISTERED



12* Aids to *Uninterrupted* Production

WITH nearly all manufacturing linked to the Defense Program, Condor Compensated Belt has twelve* significant advantages.

They include a high overload capacity, greater margin of safety and high production efficiency —because operation is uninterrupted by the need for frequent take-ups, pulled or broken fasteners or premature belt failure. These all add up to production *and* economy.

Also available in Type F where rubber friction pulley surface is desired, and Type B where some slip is necessary. All these types described in Bulletin 6808-C. Write for your copy.

12* ADVANTAGES

1. Ruptures in outside ply eliminated.
2. Freedom from ply separation.
3. Longer fastener life.
4. Can be operated on smaller pulleys.
5. Less bearing, shafting and hanger troubles.
6. For heavy loads, plies may be increased with same pulleys.
7. Operation less affected by atmospheric conditions.
8. Higher overload capacity or margin of safety.
9. Less wear on pulley side.
10. Can be dressed without injury to belt.
11. High production efficiency.
12. Material reduction in belting costs.

Condor PRODUCTS

Cone Belt	Suction Hose
Transmission Belt	Molded Rubber Goods
V-Belt	Oilless Bearings
Agricultural Belting	Hard Rubber Pot Eyes
Air Hose	Rubber Lined Tanks
Acid Hose	Rubber Covered Rolls
Water Hose	
Fire Hose	Abrasive Wheels
Steam Hose	Bowling Balls

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.

23 Townsend Street • Passaic, New Jersey

Birmingham · Chicago · Cleveland · New Orleans · New York · Boston
Minneapolis · Detroit · Pittsburgh · Philadelphia · St. Louis · San Francisco

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

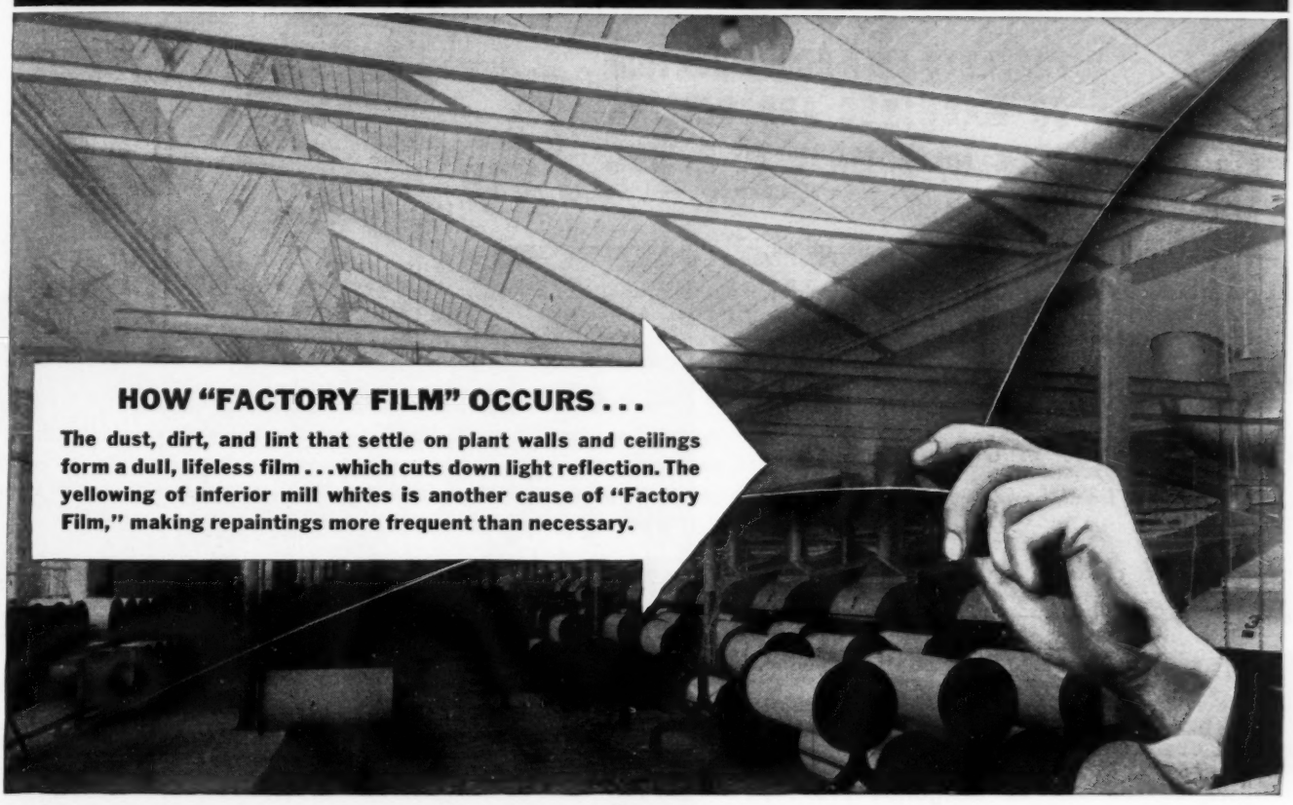
Inquiries as to our services solicited

●

ESTABLISHED 1840

GET RID OF "*Factory Film*"

WITH NEW DULUX HIGH-HIDING MILL WHITE


HOW "FACTORY FILM" OCCURS . . .
The dust, dirt, and lint that settle on plant walls and ceilings form a dull, lifeless film . . . which cuts down light reflection. The yellowing of inferior mill whites is another cause of "Factory Film," making repaintings more frequent than necessary.

DULUX . . . THE MODERN WAY TO CHECK "FACTORY FILM"

DULUX High-Hiding Mill White reduces formation of "Factory Film" to a minimum because its hard, tile-smooth surface offers dirt no foothold. It is easy to keep clean. DULUX gives maximum light reflection. Its tough film resists yellowing, making repaintings few and far between.

DULUX *High-Hiding Mill White*
Makes one-coat jobs possible!

Du Pont developed a method of *increasing the concentration of high-hiding pigment particles in suspension . . . while maintaining an unusually good spreading rate.* This stepped-up hiding power is so intense that DULUX often does the job with ONLY ONE COAT!

This means new lows in economy. For you need fewer gallons per job, and labor costs for application are substantially reduced. And most important of all, DULUX means *speed* in application. The paint crew goes over your walls and ceilings *once* instead of twice . . . and the job's done.

DULUX is a mill white of brilliant, uniform whiteness . . . gives maximum light reflection . . . has amazing whiteness retention . . . and is washable. Send in the coupon for full details.

DU PONT
REG. U. S. PAT. OFF.

DULUX
REG. U. S. PAT. OFF.
HIGH-HIDING MILL WHITE

E. I. du Pont de Nemours & Co. (Inc.), Dept. C-110
Finishes Division, Wilmington, Delaware

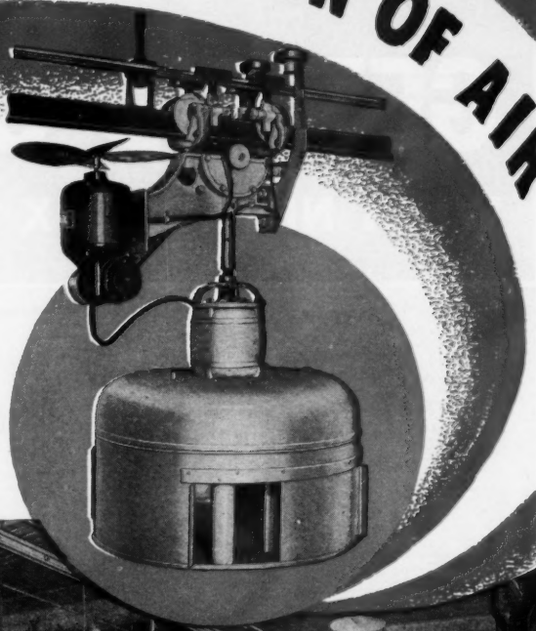
Please see that I get complete information about DULUX High-Hiding Mill White—and your new booklet.

Name.....

Address.....

City.....State.....

CLEANS WITH A SWIRLING COLUMN OF AIR



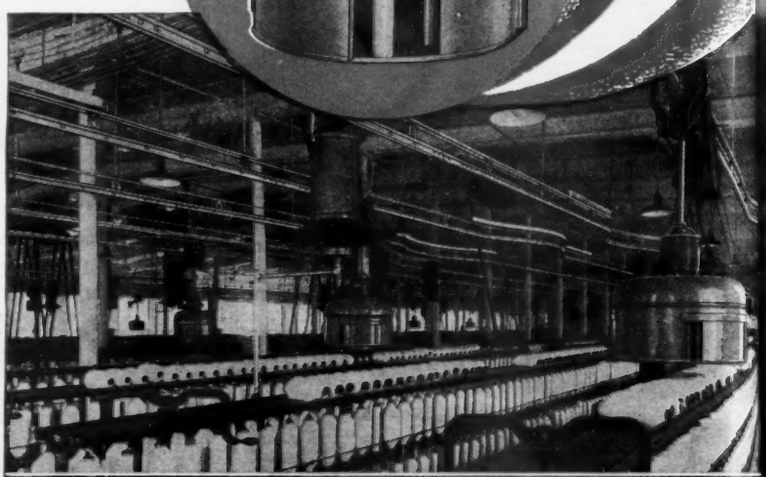
PREVENTS LINT ACCUMULATION ON MACHINES AND CEILING WITH NO DAMAGE TO ROVING

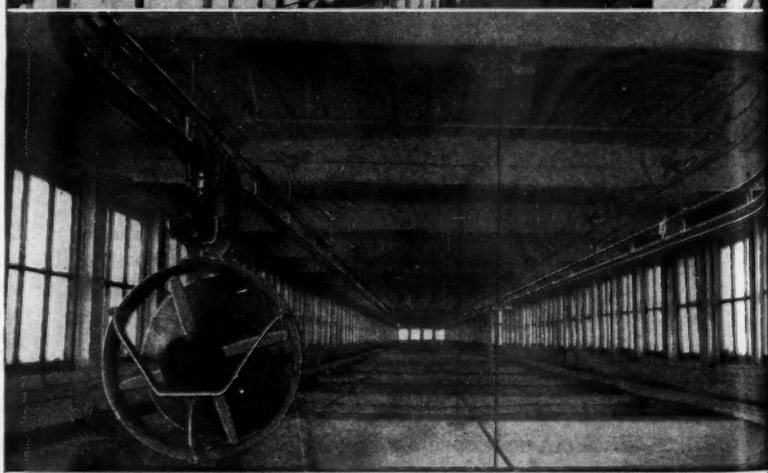
HIGH velocity currents of air, swirl across creel boards cleaning the roving and guides. These currents are carefully adjusted to meet varying conditions and to prevent damage to the running yarn.

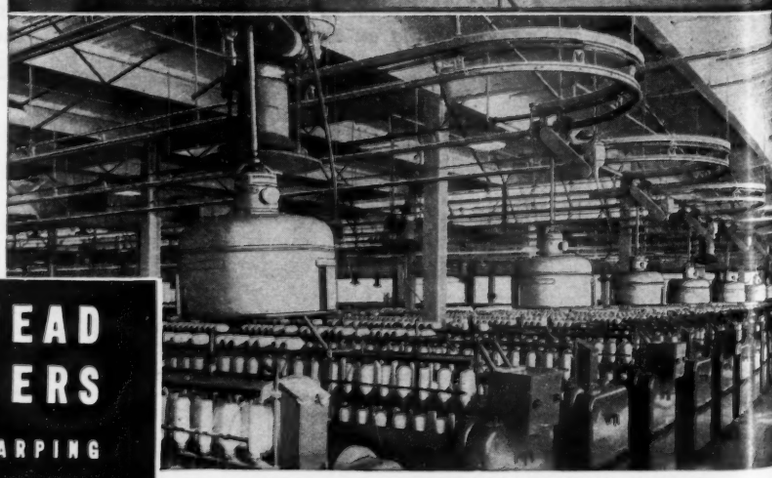
At the same time and without extra cost, a direct blast keeps the ceiling over the frame free from lint accumulation.

Continuous automatic cleaning of this type brings a marked reduction in end-downs—53% was reported in one mill. It also enables spinners to increase their output by handling more sides. Competent engineers will show how these results can be attained in your mill. A definite proposal will be offered with no obligation . . . .

For full information address inquiry to
13106 Athens Avenue, Cleveland, Ohio.







Check these results

- ✓ BETTER RUNNING WORK
- ✓ FEWER GOUTS OR BUNCHES
- ✓ LESS ENDS-DOWN
- ✓ SPINNERS HANDLE MORE SIDES
- ✓ LOWER CLEANING COSTS
- ✓ NO LOST PRODUCTION
- ✓ REDUCED MACHINE STOPPAGE

AMERICAN MONORAIL *Automatic* OVERHEAD CLEANERS

FOR SPINNING, WINDING, SPOOLING, AND WARPING

NOV 25 1940

©CIB 475767

COTTON
SERVING THE
Textile Industries

NOVEMBER, 1940
Vol. 104 No. 11

Robert W. Philip,
Editor

John C. Fonville
and L. Meade,
Assistants

F. Gordon Cobb,
Market Counselor

John C. Cook
Business Manager

Richard P. Smith,
Promotion Manager

W. E. Coogler,
Production Manager

Business Representatives

ARTHUR C. SHAW, P. O. Box 31, Wellesley Hills, Mass.
E. A. ROBISON, 148 Stoneway Lane, Bala-Cynwyd, Pa.
W. S. CUSHION, 506 The Arcade, Cleveland, Ohio.
A. E. C. SMITH, P. O. Box 611, Springfield, Mass.
L. E. ALLEN, 1401 Security Bldg., 189 West Madison St., Chicago, Illinois.
W. A. MCGEE, Box 562, Charlotte, North Carolina.
LOYD B. CHAPPELL, Auditorium Bldg., 427 West 5th St., Los Angeles, California.

Published Monthly by
W. R. C. SMITH
PUBLISHING CO.
Dalton and Atlanta, Ga.

W. R. C. SMITH, *Chairman of Board*
W. J. ROOKE, *President*
T. W. MCALLISTER, *Vice-President*
W. S. CUSHION, *Vice-President*
E. W. O'BRIEN, *Vice-President*
ROBERT W. PHILIP, *Vice-President*
O. A. SHARPLESS, *Treasurer*
J. C. MARTIN, *Secretary*

ANNUAL SUBSCRIPTION—$1.00
CANADA—$1.50; FOREIGN—$2.00

Publishers Also of
ELECTRICAL SOUTH
SOUTHERN HARDWARE
SOUTHERN POWER AND INDUSTRY
SOUTHERN AUTOMOTIVE JOURNAL

Editorial and Business Offices
GRANT BUILDING
ATLANTA, GEORGIA

IN THIS ISSUE

Editorial—

A Peep into the Future 47

General and Technical—

Sea Island Cotton Is Again Major Cotton Crop, by David Lord 49
Industry and Public Health, by Enoch Callaway 50
Theory of Yarn Skein Strength 53
Cotton Mill Men Give Opinions on Sanforizing Problem 56
Cloth Room Practice (Part 7), by Ralph Perry 59
Institute Studies Distribution 61
The 29th National Safety Congress 63
New York Meeting of AATCC 64
National Association Holds 86th Annual Meeting in Boston 66
Carders and Spinners Meet at Clemson 67
Hodges Speaks on Training Men at Spray STA Meeting 69
Greenville, S. C., "Takes off Hat" to King Cotton in Gala Celebration 70

Current Textile Topics—

Shorts and Remnants 45
Industrial Training Programs Under the Wage-Hour Law 48
Changes at Marshall Field & Company 52
Effect of Embargo on Japanese Silk 58
The Textile Exposition 68
Talk of the Month 72
New England Mill Situation 72
"The Situation" as Seen Across an Executive's Desk 76
Textile Highlights, by Henry McCarn 74
What the Southern Mills Are Doing 78
Comment on the Cotton Market 80
New Equipment and Materials 82
Timely News Items with a Textile Slant 88
New Textile Publications 90
North Georgia Processing Company Field-Day-Outing 90
Eli Whitney Day in Savannah 90
Personal Notes about Men You Know 92
Waiting Room Stuff 92
An Old-Timer Says— 95

How Other Men Manage—

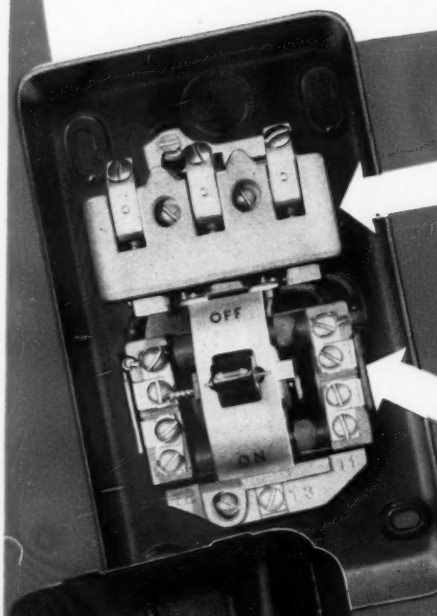
Defect in Pile Fabric 99
Part of Card Controlling Strips 101
Setting Pick on X-Family Looms 102
Take Part in the Discussion Meeting 103
Comb Box Lubrication 103
"Wash" on Research 104
Why Certain Size Coiler Tube Gears 106
Further Causes of Washboard Shuttles 106

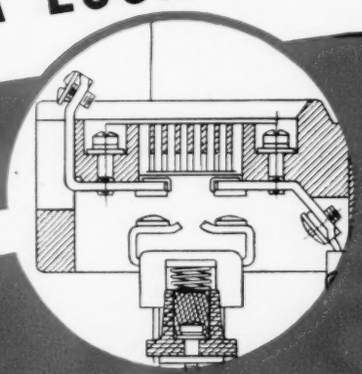
Knitting Section—

Some Methods Used in Joining Full-Fashioned Machines, by Caswell Clifton 113
A Visit to Bob's Mill 114
Finishing Circular Knit Goods (Article 3: The Peroxide Bleach) 119
Keeping Spline Tight 122
Pulled Threads in Nylon Stockings 122
Care of Frictions 122
Baskets to Handle Grey Goods 124
Even Stitch on Banners 124
Needle Trouble 124
Length and Match Control on Full-Fashioned 126
Machine Cutting on Yarn Changes 126
An Eye on the Knitting Mills 126
Snapshots at the Carolina Yarn Association Outing 128
Trends and Highlights of the Knit Goods Markets 131
Forecast 132
Thread Ratio Control for Hosiery Seamers 134
Throwsters Research Institute Elects Officers 138
Trends—Yarn Markets 140

Copyright, 1940, by W. R. C. Smith Publishing Company

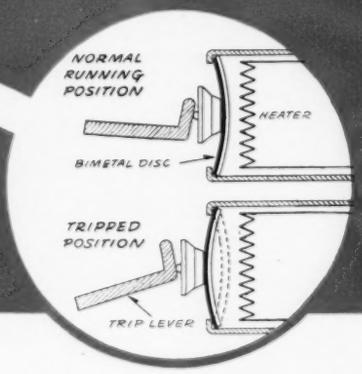
ONLY WESTINGHOUSE GIVES YOU THESE EXCLUSIVE FEATURES IN A LOOM SWITCH





◀ "DE-ION" ARC QUENCHERS TO PROTECT CONTACTS

The "De-ion" Arc Quenchers in the Westinghouse Loom Switch confine, divide and extinguish the arc in ½ cycle. Dangerous flashover is prevented—contacts last longer.

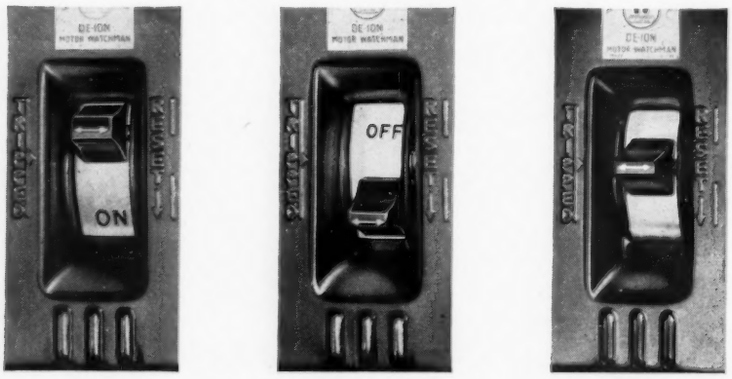


◀ ACCURATE BI-METAL OVERLOAD PROTECTION

Bi-Metal's action is unfailingly accurate—fixed by exact calibration at the factory—unchanged by years of repeated operation. There's nothing to renew or replace.

Westinghouse Loom Switch for Motors Up to 7½ hp.

SELF-INDICATING "ON"—"OFF"—"TRIPPED" POSITIONS



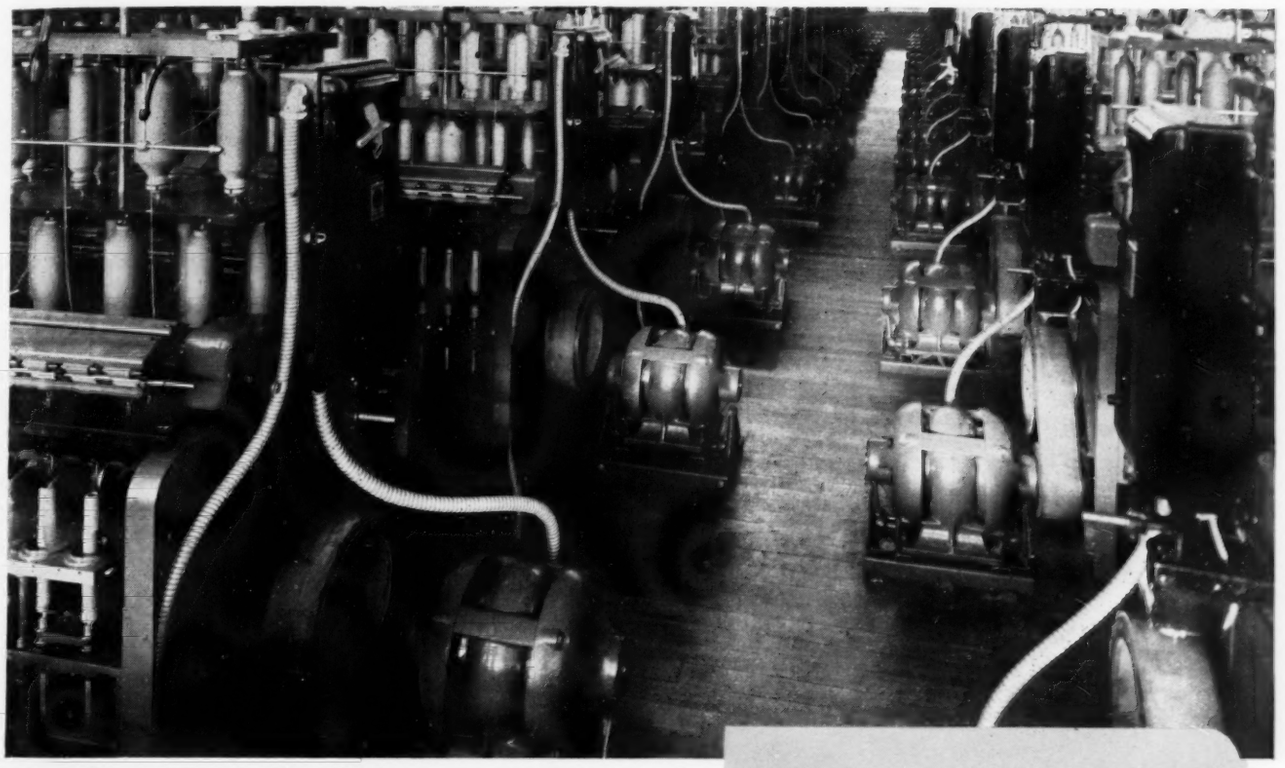
ON OFF TRIPPED

J-21093-A

Westinghouse

"DE-ION" LOOM SWITCH

WESTINGHOUSE ELECTRIC



THE LUBRICANT STAYS IN—THE LINT STAYS OUT

That's Why *LINT-FREE* Motors Reduce Maintenance Costs...

Ball Bearings Are Permanently Sealed

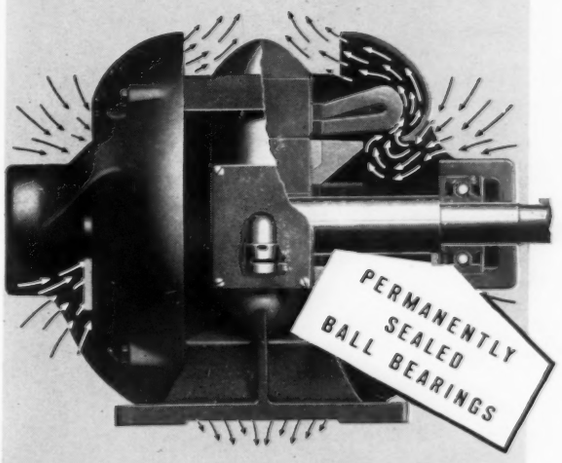
The lubricant is sealed in at the factory. No external lubrication is required. And that means overgreasing and the possible use of dirty or improper lubricant is eliminated. There is never any need for maintenance men to leave drops of grease or oil on the housing and provide a "home" for lint. There are no grease fittings or other projections on which lint might catch. And with sealed bearings, the housing is smooth and round . . . easy to wipe off.

Unobstructed Passages Let Air Circulate

Air passages are exceptionally large. The inner surface of the end brackets is sanded, filled and then finished slick and smooth with a special high-gloss, hard-drying enamel. There are no pockets or corners in the passages where lint can pile up. Lint goes in, through, and *out*.

Windings, too, are finished smooth as glass with a special baked-on varnish, to prevent lint from sticking.

Leading textile mills everywhere are using this Westinghouse Lint-free Motor. Hundreds have already been installed. Results show better production because maintenance is less. For complete details on how you can use it in your mill, see your Westinghouse representative.



Note the large, unobstructed air passages and compact construction of the sealed ball bearings. Westinghouse engineers have taken full advantage of every construction detail that would help to make this the cleanest running textile motor available.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. J-21116

Westinghouse Lint-Free Motors

ARE YOUR PRINTS

DEAD OR ALIVE?

Are your colors rich and your whites satisfactory? If not, then don't overlook the *ground shades.*

Beautiful discharge prints are not the product of the printer alone. They represent craftsmanship *plus* color selection on the part of dyer and printer.

If your ground shades bleed and they don't "cut clean" all the printing skill in the world cannot save the final result from that odious label—ORDINARY.

These colors of proven merit for *ground shades* invite the printer's best effort.

ROSANTHRENE ORANGE RNX

ROSANTHRENE BROWN RNS

DIAZO BRILLIANT GREEN GNC

DIAZO BLUE BR

DIAZO FAST BLUE 2RW

CARBIDE FAST BLACK G

ROSANTHRENE FAST BORDEAUX 2BL

CIBA COMPANY, INC.

POST OFFICE BOX 25, STATION C — NEW YORK CITY — GREENWICH AND MORTON STS.

BOSTON
PROVIDENCE
CHICAGO

CIBA COMPANY LTD., MONTREAL

PHILADELPHIA
CHARLOTTE
SAN FRANCISCO

Sole Representatives of
SOCIETY OF CHEMICAL INDUSTRY IN BASLE

Vat Dyes of
THE DOW CHEMICAL COMPANY

SHORTS AND REMNANTS

Encore for Miss America

We will be only too well pleased to let Miss America pay a return visit to our pages every month, and by the looks of it she certainly gets around in our advertising pages. This month, it is the R. E. Lovekin Corp. advertising agency and Scholler Bros. who picked her before her crowning, and who used her in their "Dura Beau" copy in September. We leave it to you—are they good pickers? What is more, they say to look for her again in their space in December.

◆

"Just How Decadent Are We?"

" . . . I am sure that no honest thinking person, after reading your editorial, could be content to let our country keep sliding into decadence without trying to do whatever was in his power to prevent such a disaster."

NORA HUGHES
Browns Hosiery Mills, Inc.
Burlington, N. C.

"I wish every voter in the United States could read these timely articles—some series lead to progress; others to disaster, especially those not based on facts and experience."

PAUL SEYDEL
Seydel-Woolley & Co.
Atlanta, Ga.

◆

Booklets for All

Just as a reminder that there is literature for all—rayon, cotton, wool, silk, knitting, dyeing, bleaching and finishing—on the textile booklet page. Have you checked it over recently?

"Please send me without obligation, free booklets described in the August 1940 issue of COTTON. . . . "

W. J. D. van DOBBENBURGH
American Enka Corporation,
Enka, N. C.

◆

More Cross Indexes

"Please send me, if possible, your index folder . . . for 1939 and 1940."

JAS. A. NANNERY
Utica and Mohawk Cottons Mills, Inc.
Utica, N. Y.

(Over 700 readers are receiving the cross indexes upon request, and saving their copies of COTTON. No wonder a lot of our comments come from articles of several years back).

◆

Salesmen and Buyers

"I have just been reading your article on 'A Salesmen Discusses Mill Buyers' (1939) and would like to give you another side to the question."

C. K. COBB
Canton Cotton Mills,
Canton, Ga.

(Okay. Fire away and get ready to dodge.)

HURRAH FOR BRITISH!

"We should be pleased if you would send us your lowest terms for half-page advertisements in your esteemed Journal.

"We are considering the question of increasing our usual advertisements."

C. BRADBURY
Dronsfield Bros., Ltd.
Atlas Works, Oldham, England.

◆

We Don't Print Anonymous Letters

"Congratulations . . . on 'Dear Boss'. Those are my sentiments exactly."

AN OLD TIME HOSIERY EMPLOYEE
Reading, Pa.

◆

Wants to Mop Up

"We have been manufacturing twisted-in-wire mops and would like to get into the sewed wet and dry mop field. Any information you can give us will be very much appreciated.

A. P. SEITZ
Furst-McNess Co.
Freeport, Ill.

◆

Management Information

"I am very much impressed with the articles from 'Management Information', Elliott Service Co., Inc. Will you please tell me if it is a magazine that can be subscribed for?"

ALVEN BENSING
Asheboro, N. C.

◆

Textile Machines Wanted

" . . . Put me in touch with some textile machine company which is equipped to design a machine to make a small woven or knitted cotton article in large quantities."

J. K. SHUSTER
William Byrd Hotel,
Richmond, Va.

(Which shall it be, Mr. Shuster, knitting or weaving?)

◆

Straightening Needles

"Enclosed please find 20 cents for which please send me pamphlet on 'Straightening Needles' for full-fashioned machines."

HERBERT A. LOEWEN
Full Fashioned Silk Stockings
Ephrata, Pa.

◆

Inquiries from North

If our northern competitors don't mind just one light blow below the belt, one of our southern friends recently told us that he got more returns from the North from an advertisement in COTTON than he did from two competing northern publications that he used at the same time.

◆

Interchange

"These reports are very interesting and valuable, as they give us a chance to compare what we are doing with other mills. If you wish to get up any other report . . . we will be glad to give you any information you desire."

JOHN P. HARRISON
Supt., Muscogee Manufacturing Co.
Columbus, Ga.

Bouquets:

(For recent advertising copy that has occasioned favorable comments.)

To Franklin Process Co. (George T. Metcalf) for the presentation of cloth and fabric swatches—if they keep this up the postal department will be after us for carrying actual samples;

To Universal Winding Co. (James Thomas Chirurg Co.) for their splendid series on actual operating and maintenance information on winding, with diagrams every month—a hint to other advertisers who are looking for a natural advertising angle;

To Warner Chemical Co. (James J. McMahon, Inc.) on showing what the mills can do with the savings on Warner Caustic Soda—not that the mills need any idea on how to spend money, but it's a good idea just the same;

To Allis-Chalmers Mfg. Co. (J. Stirling Getchell, Inc.) for headlines that really get the attention and copy that holds it;

The Textile Machine Works (William Jenkins Advertising) for some of the best photography in the book and for those proverbs that tie-in;

To Arkansas Co. (Evans, Nye & Harmon, Inc.) and Scholler Bros. (R. E. Lovekin Corp.) for the lovely ladies;

To Benjamin Electric Co. (Van Auken-Ragland, Inc.) for an effective use of color.

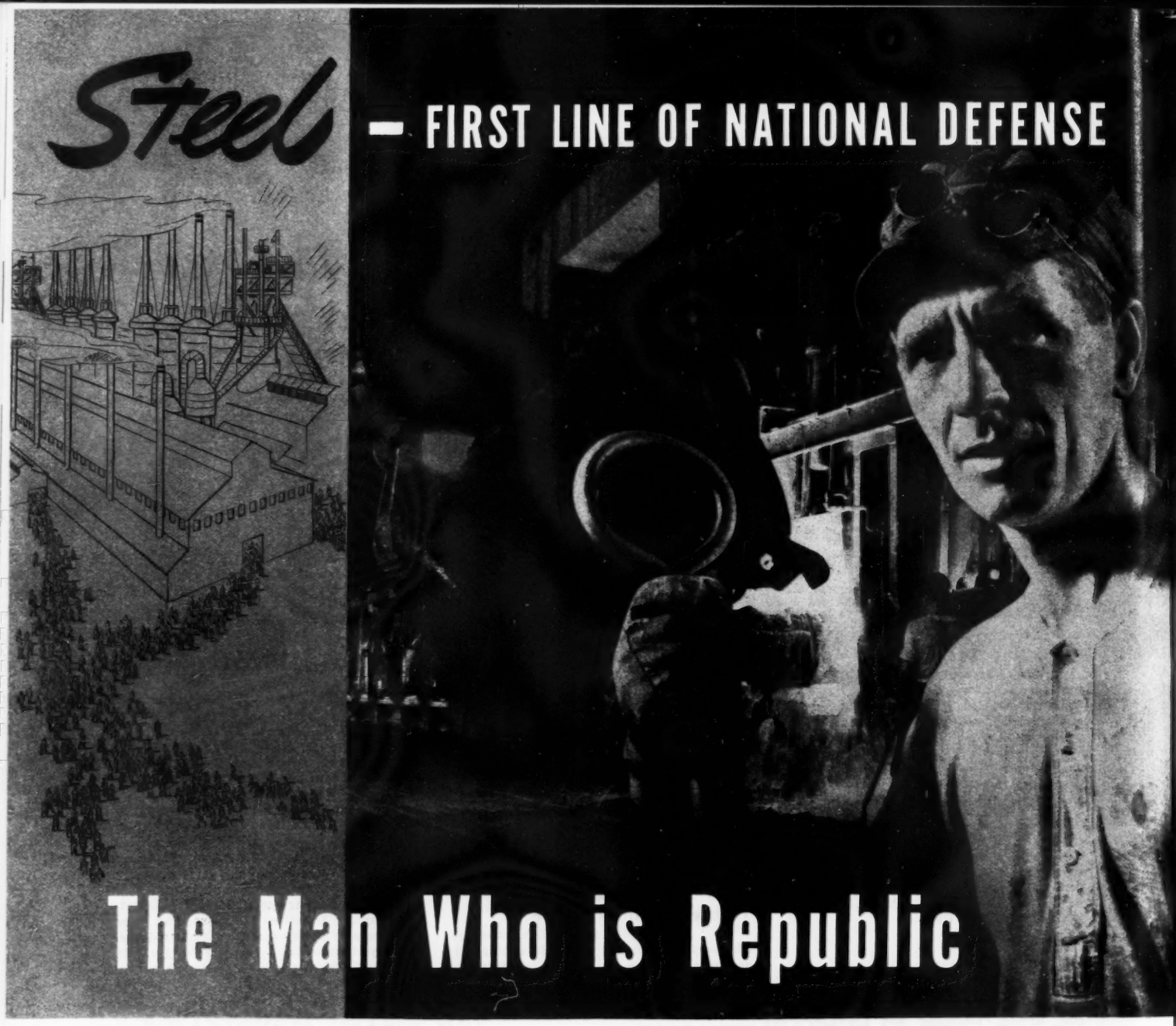
To Scott & Williams, Inc. (Hazard Advertising Corp.) for "Knitting Circular", and to Torrington Company and the same agency for insert copy that fits in.

To Taylor Instrument Companies (Batten, Barton, Durstine & Osborn, Inc.) for that recently timely series on Preparedness.

Sorry, that is all we have room for this time, but there were a lot of other manufacturers tying in specifically with the National Preparedness theme in our October issue. How about getting out that issue and looking them over and casting a few bouquets yourself.

Meet Cotton's Staff (Nos. 10 and 11)

The Yankees are in, and we don't mean the baseball team or the Union Army, but our Pennsylvania, New York and "down East" section got together at the Knitting Show last April to plot against the home office and here they are, reading from left to right, E. A. Robison, Philadelphia and Arthur C. Shaw, Wellesley Hills, Mass.—Robbie is a newcomer, with "Cotton" 7 years, but in advertising and space planning ever since he left Wesleyan's football team and in Philadelphia most of that time. We bet Art never played football, but he grew up with "Cotton" and even if he did have to register last month he has over 16 years of textile advertising checked up against that old age pension if "Cotton" ever gives one.



No bugle wakes him from his morning sleep.

No uniform tells all who see him that he is defending the liberty of America.

No beribboned medal shows his work well done.

But there he is—a typical American—55,000 of him in round numbers—working in Republic plants, mines, offices and warehouses in 35 states—daily doing his share to turn out huge quantities of billets, bars and strips of steel—that every industry may have the sturdy raw material from which to fashion the sinews that will make America safe for his children—and yours.

This is the type of skilled-in-steel worker that mans the far-flung operations of Republic. This is the type of man that during peace-time brings comfort and safety to the American way of life. And this is the type of man who, in this emergency, is giving unstintingly of his effort and his specialized knowledge, to provide America with more and better ***steel—first line of national defense.***

The line of steels and steel products manufactured by Republic is so diversified that we have prepared a complete listing in Booklet No. 199. A copy will be sent you upon request.

REPUBLIC STEEL

REPUBLIC STEEL CORPORATION • CLEVELAND, OHIO

Berger Manufacturing Division • Niles Steel Products Division • Steel and Tubes Division • Union Drawn Steel Division • Truscon Steel Company

COTTON
SERVING THE
Textile Industries
Vol. 104 November, 1940 No. 11

A Peep into the Future

EVERY DAY brings us closer to actual participation in the war. We are really in it to a certain extent now, since American opinion is almost unanimous in favoring unstinting help to England, and we have already put into effect an embargo on scrap iron to Japan and soon may be forced to embargo other war materials going to Japan. We have lent more money to China and there will probably be other loans. Probably the most cogent reason for thinking that we will be very active participants before long is the fact that England has withstood the blitzkrieg remarkably well. Two months ago there was a widespread feeling that intensive bombing could prepare the way for an actual invasion of England and that by this time the war might be over. If that had happened, the general assumption was that the Axis Powers would be so busy gobbling up their gains partitioning the British Empire, and consolidating their new possessions that we could expect comparative freedom from molestation for a year or two while we were girding ourselves for the inevitable battle to keep the Americas out of the clutches of Germany and Italy.

That England has been able to withstand Hitler's worst, and appears able to withstand it for a good while to come, accentuates the fact that it is far more to our advantage to help England break up the Unholy Alliance, than to have to struggle against it alone ourselves. From our geographical position, we could never break it up alone; but would simply have to wait for it to break itself up or ruin us. By pulling with England, there is a possibility of destroying the Axis and helping to re-establish some sort of world sanity in Europe. Not that we are responsible for Europe's sanity, but without it our own skins are constantly in danger over here. That we could long prevent European penetration of South America and Nazi corruption of its governments seems unlikely if we had to do this alone. Our South American neighbors have got to buy manufactured supplies, and it is practically impossible for them to get these supplies from us. We don't want the things that South America must chiefly sell, since we produce those things in abundance ourselves. Furthermore, our manufacturing costs are far in excess of European costs on most manufactured articles, and South American trade would therefore naturally gravitate to Europe. Things like automobiles, in which the United States stands practically alone, would continue to make up the bulk of our exports to the southern continent, but we could not do a general business in competition with a Nazified Europe which can ship cheap goods and eagerly accept South American exports in exchange.

No matter who wins the war we still will have this economic problem in South America, but if the Axis won, the economic problem would be inextricably tied up with a political problem, since the Axis Powers do not recognize the American or British conception of trade. The Nazis and Fascists must mix their politics with their business, and the corruption of the government of a South American country would, in Nazi reasoning, be just as important as doing commercial business with that country.

Furthermore, it is inconceivable that the United States could ever permit Canada to become a dependency of the Axis Powers. The Nazis have repeatedly intimated that if they defeat England they will consider all British possessions as spoils of war. The United States could never agree to that view. It would simply be suicidal for us to permit Germany to have control of Canada. It is just something that can't happen unless the United States is defeated in a war or unless the people of the United States and their Government are crazy.

Japan has reached a point in its national development where it has either got to stagnate or expand sufficiently to dominate Asia to an even greater extent than we dominate North America. Right now the Japanese are likely to attempt to take over the Netherlands' Indies and they have taken over a considerable portion of French Indo-China. Depending on imports of rubber, tin and other absolute necessities of modern civilization, the United States cannot look with complacency on these Japanese ambitions. It has been argued that no matter who owns what, they will still have to do business and will have things to sell and that we can still get all the foreign raw materials that we need. However, in actual practice it makes a big difference who owns what. To have vital supplies, without which our national industry would be crippled, controlled by a hostile power is certainly not to the advantage of the United States.

Six months ago it seemed very logical to the average American citizen that this was not our war and that we wanted no part of it. The impression

was quite general that this was a European scrap and that France and England were perfectly capable of looking out for themselves. It has taken time to change public opinion, which seems definitely to have changed. That the universal draft, which registered about sixteen million young Americans for military service in time of peace, passed off with so little objection is rather definite proof of the attitude of the American people toward this war.

It seems therefore that we are partly in it now, and will soon be in it up to our necks, although it is very doubtful if we would ever be sending out expeditionary forces or fighting battles on foreign soil, at least for a good while to come. Wars are not fought that way any longer except where countries are geographically adjacent, permitting the movement of large masses of soldiery. The modern war is fought principally in the air and on the sea between nations such as the United States and Germany, and actual invasion would probably only follow such destructive aerial bombardments and such exhausting starvation blockades as had seriously weakened the enemy. In this modern type of warfare, the United States occupies an extraordinarily important position. It is by all odds the greatest manufacturing and producing nation on earth, although for the past ten years its productive capacity has been held in check; for three years by depression, and for seven years by more or less deliberate intent. If we can get the full productive capacities of this country organized quickly, the United States can take advantage of the fortunate circumstance that England is managing to hold out against Hitler and can supply to England those fabulous quantities of munitions that will determine the outcome of the war. The public mind seems to be shaping up in that direction.

Most people seem to realize that it is a better and cheaper and more desirable proposition for us to back up the only real ally we have got, or are likely to have for many generations, than to let this ally go by the board and have to fight the world single-handed. No matter how much it costs to help England win this war it would be cheaper than building and maintaining a line of forts along the Mexican and Canadian borders and indefinitely trying to police the Atlantic and Pacific shores against any naval combinations that could be brought to bear against us. Certainly it seems prudent to save ourselves future trouble at the least possible expense and while we have somebody to help us.

THE AMERICAN textile industry has a peculiarly poignant interest in the present development. Japan has been a thorn in the side of our textile mills for a number of years. A completely bankrupt Europe under Nazi domination could be an even worse menace. Both Japan and Europe are large producers of textiles, and both could produce under their totalitarian form of government at prices so utterly ruinous that nothing but an embargo or a prohibitive tariff could keep them out of the United States. No American textile mill can even remotely hope to compete on any reasonable basis with Japanese mills or those of an enslaved Europe, desperately trying to keep itself from starving, and at the same time maintain the military machine necessary to keep all of Europe in subjection.

WHILE IT SEEMS certain that public opinion is overwhelmingly pro-British and that we are ready to go down the line as far as necessary to help England, there is one matter about which public opinion has not yet definitely expressed itself, and that is the question of whether we are going to toss our own National Socialism overboard and still be a free people when the war is over, or whether we propose to hang onto it and finally wind up with the same type of government that we now so heartily deplore in Germany and Italy. We must not forget that we have gone a long way down the road toward National Socialism, and that one of the very cornerstones of our present national administration is the policy that we must produce less but have more.

"Produce less and have more" sounds like the slogan of a lunatic asylum, but it is simply the philosophy underlying NRA and the present policy of working very little and being paid a whole lot for it. It is, of course, an impossibility and everyone able to think at all knows that it is an impossibility, but it seems to be fun to try it. This program has been bad enough in muddling through seven years of peace; it can never win a war.

Participation in the war and on a very large industrial scale seems to be inevitable. Unless there is a very decided about-face in American governmental policies and in the thinking of millions of American citizens, we are all going to wake up some morning and find that our little adventure in National Socialism has landed us into a totalitarian form of government almost exactly like the ones we now so hate abroad. The aspirations of this government will be different from those of Europe; the structure will be somewhat different, but the blighting effect upon the people will be the same. We will simply have escaped a foreign tyranny to embrace a domestic one.

Industrial Training Programs Under the Wage-Hour Law

To encourage employee training programs for the achievement of higher skills, the Wage and Hour Division, U. S. Department of Labor, announced October 7, that attendance at such training programs by employees would not be considered working time requiring compensation by the employer, provided that such attendance met four criteria. Those criteria are:

1. Attendance on the part of the employee is in fact voluntary. No training program shall be considered voluntary if a condition of the employee's continued employment in his present job is attendance at the training program.

2. The employee shall not produce any goods or perform any other productive working during such periods of training.

3. The training course must be given outside of regular working hours.

4. The training course is intended to train the employees to a new, different, or additional skill, and is not intended to make the employee more efficient at doing what he has been doing in his present job.

These criteria supersede the criteria for training programs set forth in paragraph 15 of Interpretative Bulletin 13, but do not supersede the provisions of that Bulletin with respect to safety meetings, etc.

Sea Island Cotton Is Again Major Florida Crop

By David Lord

FROM 263,000 acres under cultivation in 1910 to less than 100 acres in 1935—such is the first phase of the story of Sea Island cotton, Florida's leading crop of a generation ago. This disastrous decline in production, caused mainly by the pink boll weevil and partly by the dislocations in export trade resulting from the World War, not only ruined hundreds of farmers but changed the entire aspect of agriculture in many counties of North Florida.

Now the picture is changing again. Widespread use of the "afternoon method" which consists of the application of poisoned syrup to the plants during the hot part of the day when the weevils are thirstiest, is proving to the growers that Sea Island cotton can again become a profitable crop. As soon as the success of the "afternoon method" experiments carried out by the W. P. A. in Madison County in 1935 had been demonstrated, farmers began experimenting with Sea Island cotton in many other parts of the State, with the result that 3,072 bales of the long-staple crop were produced in 1937.

Much of this increase, however, was experimental, and the yield dropped to 1,898 bales in 1938 and 1,110 bales in 1939. But now that the experimental phase is over, the level of production has begun to rise, and a yield of 2,500 bales is expected for 1940.

Sea Island cotton formerly brought $10,000,000 a year to Florida growers, and it is estimated that it will again reach a $3,000,000 or $4,000,000 level. One interesting feature of the new development is that the growing centers now have a tendency to move southward. Putnam, Flagler, Marion and Lake Counties, all lying to the south of the former Sea Island belt, are prominently mentioned in the news as coming centers of production.

Figures from Putnam County suggest that the acreage devoted to Sea Island cotton over the state as a whole will soon rise toward the pre-World War level, because these figures show an increase of 1500 per cent (from 50 acres to 750 acres) since 1936 in this one county alone, with an estimated increase of 4,200 per cent (to 2,100 acres) by 1941. A similar note comes from Marion County, where Sea Island acreage has doubled during the past year. Columbia County reports that the 600 acres planted this year will be greatly increased by 1941. Reports from Ocala indicate that the amount of Sea Island cotton ginned there has trebled since 1939.

Such figures as these demonstrate that what is taking place is a development of major proportions, and that Sea Island cotton is again becoming one of the leading crops of the State. The United States Department of Agriculture, the Florida State Agricultural Department, the University of Florida agricultural experiment stations and the W. P. A. have all collaborated actively in the Sea Island revival, and are now bending their efforts toward satisfactory solutions to the main problems of the industry—seed, production methods and maintenance of quality.

There is a strong positive demand on the world market for Sea Island cotton, and no substitute has been found for its superior qualities. The successful revival of this important industry in Florida is certainly a hopeful note at a time when American agriculture—and American cotton in particular — have suffered so many set-backs as a result of unfavorable world economic conditions.

Industry and Public Health

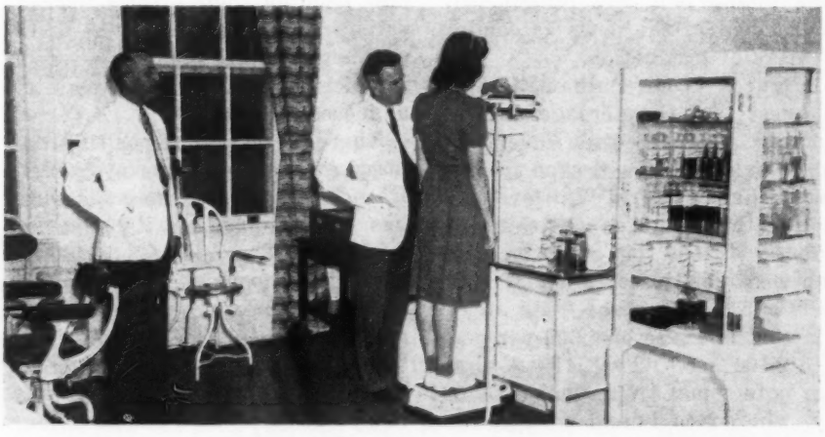
A case study of what a well-planned public health program has done for employees of Callaway Mills

By Enoch Callaway, M.D.
Medical Director, Callaway Mills

THE IMPORTANCE of health work to industry has been so definitely proven that there should be no need to point out its value and there would be no such need if the history of improved health among workers was clearly understood and known by the executives of all industries. Unfortunately, many things which have been accomplished by public health measures are taken for granted by industrial heads who do not know or realize that, except for persistent effort on the part of those charged with the prevention and control of diseases, the production of their industries would be seriously affected.

Not only is the worker's efficiency impaired by his own poor health, but also by the sickness of his children or other members of his family. Many industries have been content to profit as parasites on the work done by others and this attitude has to some degree lessened the benefits to the health-conscious industries. However, even though at times isolated efforts have appeared to be of little avail, the final result has usually been specifically valuable to the industry working for improved health among its own employees. The executives of Callaway Mills have always been keenly conscious of the value of health work and have not only co-operated with the county and state health agencies, but also have independently initiated and carried on numerous health activities. A resume of these activities which I have observed and taken part in for more than 20 years, I believe, will be of some interest.

Among the first health measures instituted by this industry was an effort to combat pellagra and other nutritional diseases. After taking this matter up with several eminent medical men, a plan to promote ownership of milk cows and the home production of vegetables was put into operation; vegetable seed and plants were distributed to workers; prizes were offered for best gardens and garden products; an employee who desired a milk cow was loaned money to purchase one; tracts of land were set aside and maintained as free pastures. This plan was started over 25 years ago, and has been considered so successful that it has been in continuous operation. In 1939, employees of Callaway Mills in LaGrange had 1,371 gardens and 700 milk cows. As groups of two or three families frequently are joint owners of one cow, this number appears to be sufficient to furnish the 1,400 families with a plentiful milk supply.



Dr. Callaway is shown in the mills' medical clinic where employees receive examinations and treatments.

The terrible ravages of typhoid fever prior to almost universal vaccination is hardly conceivable to the physician who has graduated from medicine since 1920. In the summer of 1915 prior to my senior year in medicine there were very few families among the employees of Callaway Mills who did not suffer from this disease. This was the usual summer occurrence. An organized effort was made to vaccinate all employees. The good results, of course, were not immediately noticeable. However, the work was continued and there has been no appreciable outbreak of typhoid in the community since that time.

From 1920 to 1933, all employees and almost all members of their families were vaccinated every two years by the medical department of the mills. Since that time the work has been carried on by the Troup County Board of Health. The occurrence of typhoid in the past 20 years has been negligible and usually extraneous. One case apparently not extraneous was a young German who had not been vaccinated. This case demonstrates the fact that typhoid bacilli are even now present and that immunity to outbreaks depends, to a considerable degree, on vaccination.

Continuous health work and education had so convinced our employees of the value of preventive measures that following the suggestion of Dr. S. C. Rutland, in 1930, permission was requested from the parents for diphtheria immunization of all school children. At the same time it was suggested that pre-school children should also be immunized. The

response was almost 100 per cent; the benefits were quickly apparent. I believe this work was of great value in making this a routine measure in all schools in Troup County.

From 1931 to 1933 an effort was made to find all existing cases of tuberculosis among the children of Callaway Mills' employees attending Unity and Southwest LaGrange schools, and by tracing these back to family contacts, locate the active infectious cases. The method used was to run tuberculin tests on all school children and check positive reactors with X-ray examinations. Although it was known that all cases of tuberculosis do not react positively, this was considered the best approach and it was felt that by repeating these tests for several years that a large majority of cases would be found. I believe this to be true.

More than 1,200 children were examined and 65 were diagnosed as having childhood or minimal adult pulmonary tuberculosis. All final diagnoses of tuberculosis were made jointly by Dr. Rutland, Dr. H. C. Schenck and myself. Approximately 100 adult cases were also located by follow-up examinations of contacts. The treatment of these children, and the record of results obtained following tonsillectomy under local anesthesia in 44 cases has been previously reported. The majority of these children became arrested cases with a minimum amount of care and supervision. A few needed hospital care. The small group who have continued under my observation have remained in good health. Unfortunately, due to the general industrial and financial conditions of 1933, this work was discontinued. Although not completed, I believe that both actual and educational benefits of continued value resulted.

Further experience has shown that the good results obtained by removing these children's tonsils under local anesthesia was due to complete absence of inspiration of blood and infected material at the time of operation. This result can be obtained under a skillfully administered general anesthesia if the child is placed in extreme Trendelenburg or Rose position and this is maintained from the beginning of administration of the anesthetic until reaction is well advanced. Children should be examined for tuberculosis before removal of tonsils. If positive, they should be safeguarded from possible pulmonary injury at the time of operation. An improper operation is harmful, but a properly managed, skillfully performed removal of infectious foci is of decided benefit, both in childhood and in adult tuberculosis.

Ownership of milk cows and home production of vegetables are encouraged in combating nutritional diseases.

The presence of a large number of undiagnosed cases of tuberculosis in a community served by excellent physicians demonstrates the fact that only by concerted public health action can any appreciable progress be made against this disease. The marked reduction of tuberculosis brought about by concerted organized health work has been extremely valuable from an industrial point of view. It is indispensable that both industries and health departments continue to co-operate in their efforts to prevent and control this disease. If activities against tuberculosis are allowed to lag, it will again menace civilizaton.

Before Surgeon General Parran became syphilis-conscious and made the disease a fit subject for polite table talk, Callaway Mills had decided that it impaired the efficiency of its employees and something should be done about it. With the alternative of treating or refusing employment to syphilitics, it was decided that treatment should be demanded and offered by the mills. While this policy has been practiced for ten years, accurate statistics are only available for the past five years. From the period August 3, 1935 to February 3, 1940, Wassermann or Kahn tests have been made on 20,199 persons and positive reports received on 621 cases. As 97 per cent of these were white people, the percentage is not appreciably changed by the higher occurrence of syphilis in Negroes. It, however, is changed by the higher occurrence existing in transient workers who make up about 25 per cent of the entire group. Re-examinations of old employees show less than 2 per cent positives, while the entire group shows 3.08 per cent positives. Treatments are given by the medical examiner and the average number of treatments per case has been 40. This figure is lowered by temporary or transient workers. The permanent employee is continued under treatment for two years or until a clinical and serological cure is obtained. The majority appreciate this attention.

The known syphilitic under treatment is neither a health nor industrial hazard. There have been no accidents attributable to this disease since this policy was adopted. There has been no known infection of contacts. Neurosyphi-

lis is now almost unknown among our workers, but this was not always true. The rejection and discharge of syphilitics by industries is ill advised because it encourages concealing the disease with all of the complications which this causes. The demand that these cases receive treatment is a necessary requirement to maintain the efficiency of the worker and protect the health of others.

The importance of malaria control has been recognized and an effort has been made to co-operate with and aid the county health department in this work. As this phase is handled by the engineering department, I do not feel competent to discuss it in detail. Financial aid has been given on projects and some portions of projects have been done entirely by Callaway Mills. All suggestions that the health department has made to prevent mill ponds from becoming mosquito breeding places have been carried out.

On two occasions we have attempted to prevent, to some degree, the loss of time and efficiency caused by colds. The first effort was made by the administration of cold vaccine. This was controlled by complete vaccination in one plant, no vaccination in one

The author at his desk . . . .

and partial vaccination in another. It was found to be of no value. The second effort was to abort colds by prompt treatment. At the first sign of a cold, the sufferer had his nose sprayed with an ephedrine solution, followed by a spray to nose and throat of a fresh 25 per cent argyrol solution. Pressure atomizers were used. The results were fairly good, but the difficulty of getting the workers to report and the difficulty of having skilled personnel present at all times made this impracticable. The president of Callaway Mills, Fuller E. Callaway, Jr., refuses to be discouraged by these failures and has requested that the research and medical departments co-operate and continue their efforts to combat this annoying, expensive and dangerous disease.

For many years routine examinations have been made of all applicants and all old employees have been re-examined each year. Following the examination of old employees, a letter is written recommending that they see their family physician for the correction of defects found. Feeling that this examination has not produced the results it should have produced, a change is being planned. Applicants will be examined as before but a different blank will be used for health examinations. This blank will be similar to the standard hospital record and will contain a place for patient's complaint, history and family history, as well as the doctor's findings. This examination will be confidential and will not be used other than to promote the worker's health.

Callaway Mills has always felt that public health is of great benefit to industry and that its benefits should not be merely accepted, but that industry should make every effort to promote the health of workers.

This article is a digest of a paper presented by Dr. Callaway before the 1940 annual meeting of the Georgia Public Health Association in Atlanta, Ga.

◆◆◆

Miss Eisnor Is Institute's New Director of Fashions

Miss Nova Eisnor, for five years fashion and promotion co-ordinator of the Mutual buying syndicate, has been appointed fashion director of the Cotton-Textile Institute. She succeeds Miss Catherine E. Cleveland who has

Miss Eisnor

become chief of sewing projects of the Works Progress Administration. Miss Eisnor will have charge of the Institute's fashion shows and will act as liaison between the mills and converters, cutters-up and retailers, along with other duties.

Changes at Marshall Field & Co.

Several changes in the personnel at the manufacturing division of Marshall Field & Co., with headquarters at Spray, N. C., are of interest to the textile trade. Luther H. Hodges, general manager of the manufacturing division, will move his office from Spray to New York City in order to devote his full time to the direction of sales of the manufacturing division. J. Frank Wilson, formerly manager of the company's Fieldale, Va., operations, will go to Spray as production manager of all North Carolina and Virginia mills of the company. H. W. Whitcomb, formerly director of purchases and assistant to Mr. Hodges, will become assistant production manager. J. H. Ripple, formerly superintendent of the towel mill at Fieldale, will become manager of that mill and E. H. Goode, superintendent of the hosiery mill at Fieldale, has been promoted to mill manager. E. E. Syms, formerly superintendent of the Waucantuck Mills, Uxbridge, Mass., has accepted the position of superintendent of the woolen mill at Spray. He is a graduate of the Philadelphia Textile School and the Rhode Island School of Design.

◆

Leonard Kleeb of Pepperell Paid Tribute by Employees

On October 12 the employees of the Pepperell Manufacturing Company, Fall River, Mass., honored the memory of their late manager, Leonard Kleeb, Jr., who passed away in August. A memorial flag pole given by the employees was dedicated. Addresses were made by R. H. Leonard, president of the company, and Dr. Karl Reiland, former rector of St. George's church, New York. Mrs. Kleeb unveiled the memorial plaque. The drum corps and a delegation of the American Legion were present during the impressive ceremony. In his address Mr. Leonard said of Mr. Kleeb, "He not only knew how to deal with machinery but he knew people; he liked people, and especially the people in the mill . . . his chief interest always was in the human being."

Theory of YARN SKEIN STRENGTH

THE PURPOSE of this article is to outline the theory of yarn skein strength and its calculation, and at the start I might say that the technicalities involved to bring about a new skein strength formula, which explained in this article, are many.

To save the reader from long preliminaries the writer has changed the usual procedure and brings first the result and then lets the reader decide whether he wants to follow up the rest of the article or not.

The number of pounds needed to break a skein of yarn makes or is called the "skein strength". A skein is obtained by winding a 120-yard piece of yarn on a reel of 1½-yard circumference. The cross section of each of these 80 strands shows approximately the same number of fibers. Coarse yarn numbers have more fibers per cross section than fine numbers.

If the yarn number and the length of staple (cotton grader's measurement) are known, we can pre-determinate close figures as to what the skein breakage will be in pounds.

Let B stand for pounds skein break which we wish to calculate.

L = cotton grader's staple length converted to decimal inches.
W = Per cent comber waste taken out if the yarn was combed.
Z = Constant whose value is $\frac{4000}{\text{Yarn Cts.}}$

$$B = 2.15 \times L\left(1 + \frac{W}{225}\right)\left(.3Z + 1 - \sqrt{1 + Z}\right)$$

Example:

No. 18½s yarn is made of 1⅛-inch cotton with 12 per cent comber waste taken out. What skein strength may be expected?

$$B = 2.15 \times 1.125 \times \left(1 + \frac{12}{225}\right) \times \left(.3 \times \frac{4000}{18\frac{1}{2}} + 1 - \sqrt{1 + \frac{4000}{18\frac{1}{2}}}\right)$$

$B = 2.15 \times 1.125 \times 1.05 \times 51.1$
$B = 130$ Lbs.
If this cotton is not combed, we have
$B = 2.15 \times 1.125 \times 51.1$
$B = 123$ Lbs.

All indications point to the conclusion that skein strength or strength of yarns in general is entirely dependent on the surface frictional strength of each individual fiber. Without being twisted together a yarn will fall apart.

A yarn can never be stronger than the total breakage strength of its cross section fibers. Through frictional utilization it may attain a certain maximum high but always below total fiber cross section strength. Therefore, the greatest factor is not the individual fiber strength as much as its surface strength when pressed and held against surrounding surfaces interloping and inter-twisting.

While many factors help to increase the strength, other factors are detrimental to strength.

Any factor that tends to increase friction to its maximum natural state for fibers is likewise increasing the yarn strength. The following factors are well known to be beneficial:

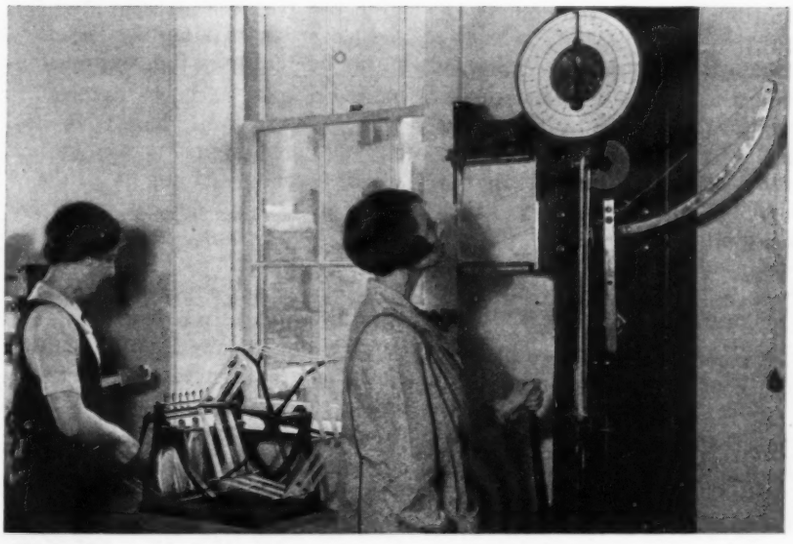
A maximum of fiber convolutions; longer staple; maximum twist; number of fibers per cross section, and individual fiber strength.

The fullest amount of frictional ability is attained by all fibers that are embedded within the twisted yarn cylinder. All fibers on the outside of the yarn cylinder have only partial frictional hold on the other fibers, the greatest part of their surfaces being exposed and thereby having a small "working surface" or none at all.

The following theory is based on this assumption and is important for consideration, since *on a fine yarn cylinder there is a comparatively greater inactive circumference surface than on coarse yarns with many fibers, notwithstanding its increased overall diameter.*

Development of Skein Strength Formula

In order to lay out a step by step development of a skein strength formula based on this theory, let us first consider a yarn



cross section of hexagonal to circular shape with N fiber layers around its imaginary center. According to the accompanying illustration, for example, we find that six fibers make the radius and, of course, six fibers also form one side of the hexagon.

The number of fibers to the radius also indicate the number of fiber layers N around the imaginary center.

The total number of fibers to the full cross section is according to Duerst* $S = 3N(N + 1)$; in which N represents the number of fiber layers.

We have now established the two main points as follows: First: total fibers in cross section $S = 3N(N + 1)$. Second: Number of fibers of the last (periphery layer) layer $= 6N$

These two parts can be arranged in the following equation:

Total Number of fibers per yarn cross section		Number of partly inactive surface fibers		Number of inside fibers
$3N(N+1)$	—	$6N$	=	$3N(N+1)-6N$

Formula 1

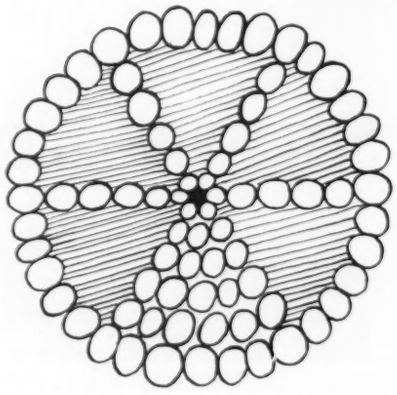
The Practical Side

While *Formula 1* is a clean mathematical equation, we must now consider the practical aspect, since obviously not all periphery fibers are absolutely frictionless but part of them, whose ends may still be held by inside fibers, are in fact also partly "working fibers", but to establish the exact amount and draw a clear line is an impossible task.

One good reason to assume that the periphery fibers are adding to the total frictional strength is the logical deduction that all fibers not being held, or for that matter holding themselves fast, would fall off.

Through comparative graphs and other tests the writer has found that within reason we can assume that from the potential periphery fiber frictional strength about 1/6 is actually present, while the other 5/6 is nil.

*For other discussions on the Duerst Formula, read "The Duerst Formula", Jan. '39, page 56, for calculating the twist per inch in roving; and "The Duerst Method of Figuring Progressive Yarn Twist", Dec. '39, page 64. John Duerst is research engineer for The Clark Thread Company of Georgia, Clarkdale, Ga.



Graphical cross section of a yarn with 6 fiber layers. $N = 6$
Total fibers $= 3N(N + 1) = 3 \times 6 \times 7 = 126$
Periphery fibers $= 6N = 36$
Number of exposed non-frictional fibers $= 5/6 \times 36 = 30$
Actual "working" fibers 96

Considering this to be the case, *Formula 1* becomes:

$$3N\ (N + 1) - \frac{5}{6}\ (6N) = 3N\ (N + 1) - 5N$$

Formula 1a

The actual number of "working fibers" within a yarn cylinder is therefore $3N\ (N + 1) - 5N$

Now N, the number of fiber layers around the center of a yarn cross section, may be calculated as follows, if S, the total number of cross section fibers is known

$$S = 3N\ (N + 1)$$

$$\frac{S}{3} = N^2 + N;\ N^2 + N - \frac{S}{3} = 0$$

$$N = \frac{\sqrt{1 + \frac{4S}{3}} - 1}{2}$$

$$N = \frac{\sqrt{1 + \frac{8S}{6}} - 1}{2}$$

Formula 2

Since S represents the number of fibers per yarn cross section, it would be too much to go through the trouble to count the fibers each time, so N too must be brought to form.

First, we know that the number of fibers per cross section are inversely proportionate to the yarn counts. Or, if the number of fibers of yarn No. 1.00 be S, the number of fibers in any other counts will be

$$S_n = \frac{S}{Cts_n}$$

and, furthermore, if the number of fibers per cross section of yarn No. 1.00 be approximately 3000, the corresponding number of fibers of any other counts would be

$$S_n = \frac{3000}{Cts_n}$$

This new information incorporated in *Formula 2* we have:

$$N = \frac{\sqrt{1 + \frac{4000}{Cts}} - 1}{2}$$

Formula 3

The value of N can be incorporated in *Formula 1a* which reads:

No. "working fibers" $= 3N\ (N + 1) - 5N$

Before doing so, we may consider that the first member of the equation $3N\ (N + 1)$ is equivalent to $\frac{S}{Cts}$, or at No. 1.00 Cts. taken as a base equivalent to $\frac{3000}{Cts}$ so we have

$3N\ (N + 1) - 5N =$ No. "working fibers"

$$\frac{3000}{Cts} - 5\left(\frac{\sqrt{1 + \frac{4000}{Cts}} - 1}{2}\right) = \text{Number "working fibers"}$$

$$2.5\left(.30 \times \frac{4000}{Cts} - \sqrt{1 + \frac{4000}{Cts}} + 1\right) = \text{Number "working fibers"}$$

and in order to simplify the formula by calling the expression $\frac{4000}{Cts} = Z$, we get

Number working fibers per cross section $= 2.5\ (.3Z - \sqrt{1 + Z} + 1)$

Formula 4

At this point, in order to line up further developments, the calculations take a turn to more empirical trend.

We have stated that the total fibers S in a cross section be $3N\ (N + 1)$ and in *Formula 1a* we find that the number of active fibers were $3N\ (N + 1) - 5N$. Now,

by plotting these two values against each other on logarithmic paper the writer has found that the ensuing curve shows a remarkable similar trend to skein strength as plotted in like manner.

$3N\ (N + 1)$ for "Y" axis
$3N\ (N + 1) - 5N$ at "X" axis

This being the case, the writer has then deducted that the number of working fibers present are the direct indication of the strength, and, upon comparing actual strengths results with the plotted picture, it was found that a correction factor or coefficient of .86 was needed to adjust the final strength formula to the skein strength values of 1-inch cotton.

On the strength of this information, the writer thinks that friction strength in cotton yarns is tantamount to skein strength and *Formula 4* will now read thus:

$$\text{Skein Strength} = 2.5 \times .86\ (.3Z - \sqrt{1 + Z} + 1) = 2.15 \times (.3Z - \sqrt{1 + Z} + 1)$$
Formula 5

Furthermore, it is reasonable to expect that the staple lengths would be directly influencing the strength of yarns, so we can extend *Formula 5* to read

$$\text{Skein Strength} = 2.15L\ (.3Z - \sqrt{1 + Z} + 1)$$
Formula 6

wherein, L is the staple length in decimal inches as given by cotton graders.

While *Formula 6* would be the last word for carded yarns, we must bear in mind that the combed staple length for combed yarns is considerably longer than graders' raw cotton averages.

Through practical experimentation we found that for approximately every 7 per cent comber waste taken out, the average staple length as given for raw cotton will increase approximately 1/32-inch. Or, as per arbitrary calculation, if W stands for per cent of comber waste, the combed staple length will be approximately

$$L \times \left(1 + \frac{W}{225}\right)$$

Formula 6 therefore, may now be presented with all major factors affecting yarn strength as follows:

$$\text{Skein Strength in Pounds} = 2.15 \times L\left(1 + \frac{W}{225}\right)\left(.3Z - \sqrt{1 + Z} + 1\right)$$
Formula 7

wherein

L = Lengths of grader's average staple in decimal inches
W = Per cent comber waste
$Z = \frac{4000}{\text{Cts}}$

Formula 7 has three distinct parts.

First, 2.15 the Multiple or Coefficient (M)

Second, $L\ (1 + \frac{W}{225})$ the staple correction factor

Third $(.3Z - \sqrt{1 + Z} + 1)$ Fiber constant (F)

The multiple is of a rather arbitrary nature. It might be a little higher for warp yarns, etc. The staple correction factor too is arbitrary.

The third part may be calculated for each counts and tabulated and given a letter for final simplification of the formula. If we call this constant F, we have

$$\text{Skein Strength in Pounds} = \text{MFL}\left(1 + \frac{W}{225}\right)$$
Formula 8

for most medium to hard twisted yarns.

Formula 8 may be used to advantage in two ways.

First, by calculating actual mill skein strength results to the multiple M as follows:

$$\frac{\text{Actual Mill Skein Strength}}{\text{F L}\left(1 + \frac{W}{225}\right)} = \text{M}$$
Formula 9

and then, M may be standardized for every count or for groups and the expected skein strength may be calculated from these standard multiples according to *Formula 8*.

While in theory multiple M should be constant, it will be understandable to the practical spinner that no two tests are exactly alike, and in our formula M will absorb the errors, differences of data, etc., by appearing higher or lower within a comparatively small range on yarns within "filling" characteristics.

Here are four examples of wide scope to test the formula:

Example: 10s yarn is made of 1 11/32-inch staple at 22 per cent comber waste taken out. The actual skein strength, averaged over considerable time, is 320 pounds. What is the multiple M?

L = 1 11/32-inch = 1.34-inch
W = 22 per cent
$Z = \frac{4000}{10} = 400$
$F = .3Z + 1 - \sqrt{1 + Z}$
Strength = 320 pounds

$$M = \frac{320}{1.34 \times \left(1 + \frac{22}{225}\right) \times F}$$

$$M = \frac{320}{1.34 \times 1.098 \times 101} = 2.15$$

Example: 100s is made of 1 11/32-inch staple at 26 per cent comber waste and breaking in the average 21.4 pounds. Find the multiple M.

$$M = \frac{21.4}{1.34 \times 1.115 \times 6.6} = 2.17$$

Example: 18½s was made of 1⅛-inch cotton at 12 per cent comber waste. Actual skein strength was 130 pounds. Find multiple.

$$M = \frac{130}{1.125 \times 1.053 \times 51.1} = 2.15$$

Example: 10s carded yarn 1-inch staple broke 210 pounds. Find multiple.

$$M = \frac{210}{1.00 \times 101} = 2.08$$

Suppose that this 1-inch cotton had really averaged 1/32-inch less all the way, we have

$$M = \frac{210}{.97 \times 101} = 2.15$$

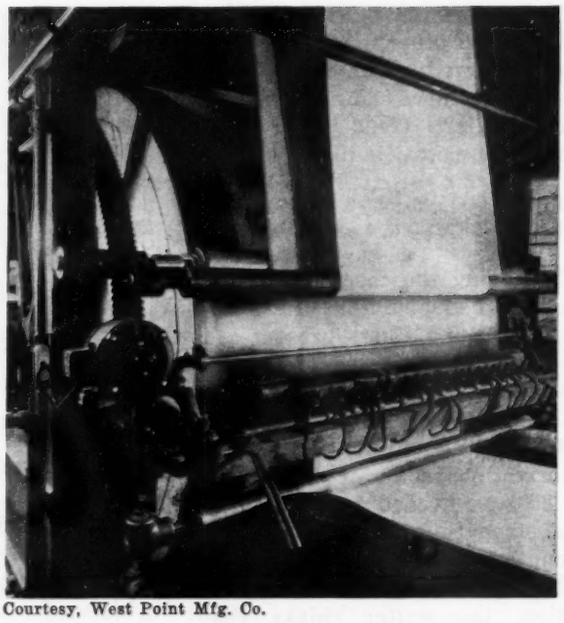
So we see, this multiple could show us whether the cotton staple was up to standard or other processing deficiencies might show up in like manner.

Second Nylon Plant

A second plant for the manufacture of nylon yarn will be built at once at Martinsville, Va., according to Du-Pont, manufacturer of the yarn. An expenditure of approximately eleven million dollars is planned in the present development, which is expected to come into production late in 1941, and to be in full operation in the spring of 1942. With the plant at Seaford, Del., and the one at Martinsville, it is hoped that it will create an aggregate capacity of approximately 16 million pounds. Although many uses have been found for nylon, more than 90 per cent of the nylon yarn produced today goes into the manufacture of women's full-fashioned hosiery.

Cotton Mill Men Give Opinions on Sanforizing Problem

A study on shrinkage in a specific cotton fabric



Courtesy, West Point Mfg. Co.

A close-up of Sanforizing, by Robert Yarnall Richie

A COMPARATIVELY new subject for mill men to discuss is that of Sanforizing, and its effect on various types of goods. There has been much interest displayed in the percentage of shrinkage that Sanforizing gives to goods of different construction, and the effect that twist in the yarn has in relation to the shrinkage problem.

A recent inquiry from a mill whose goods are Sanforized at an independent finishing plant follows: "We are making a line of goods and having it Sanforized, and our selling house says the shrinkage is excessive. We want to find out how they know whether it is excessive or not. The construction in the grey is 38½-inch 51x44, 2.90 goods, 15s warp and 12s filling, with warp twist multiple of 4.75 and filling twist multiple of 3.50, made from 1-inch Middling cotton, colored yarns; the fabric in the reed is 40.75 inches and is woven on both box and dobby looms. Our present shrinkage is 15 per cent.

"We would also like to know the answers to these questions: Under the conditions outlined above and on this fabric, what warp and filling twist multiples should be used on our conventional spinning to get the lowest possible shrinkage in the cloth? On constructions as near as the one given, what are similar mills using? Is it correct that the shrinkage in the goods is controlled by the twist?"

This inquiry was submitted to several sources to get a cross-section of opinion on the subject, and the answers should be of interest to the industry generally.

Answer No. 1. A Sanforizer can be set to take down 15 per cent shrinkage. In fact, a cloth can be Sanforized so that it will stretch every time it is washed for a long time. If this man would tell us what the ordinary laundry shrinkage in his cloth is, then we might help him with his twist, etc., but the fact that he gets 15 per cent shrinkage on his Sanforizer tells us nothing.

Answer No. 2. Concerning the supposedly excessive shrinkage on 38½-inch 51x44, 2.90 cloth. Assuming that this man is speaking of warp shrinkage and that the cloth is Sanforized in the grey or rather with just sufficient work to prepare it for Sanforizing, this shrinkage of 15 per cent does not seem to be excessive. Of course, should this fabric be processed in such a way as to receive a great deal of handling, comparable with that involved in bleaching, dyeing and finishing, the shrinkage would be less, because of the so-called permanent set from the handling; however, fabrics merely given the necessary preparation from the grey and then Sanforized, do not get the benefit of this handling and therefore show considerably higher shrinkages.

While there may be some appreciable effect of the filling twist on Sanforizing loss in the warp, we have never heard of it and have no evidence to offer on this point.

Answer No. 3. The mill states that their cloth shrinks 15 per cent upon being Sanforized. This is not an unusual thing, for some fabrics shrink this much. We have a fabric that shrinks 16 to 17 per cent.

I think that twist in the warp and filling will have some effect on the shrinkage and this mill might try a little more twist in their filling, but our experience has been that the texture of the fabric, that is the weave, count, etc., have more to do with shrinkage than anything else.

Some fabrics just simply cannot be completely shrunk. In one place I worked we attempted to Sanforize some curtain materials and found it was impossible as the goods just kept shrinking each time.

Some mills have goods mercerized with the idea of reducing shrinkage. Of course this is very expensive. They size the cloth with starch, dextrine, or some gum and of course reduce the shrinkage to some extent but there is really nothing much that can be done that I know of to prevent a fabric from shrinking if the natural shrink in the fabric is there.

Answer No. 4. The basic mechanical action of the Sanforizing machine is nothing but a wetting of the fabric, packing it together warpwise by mechanical action,

and drying it in the packed condition. This mechanical packing means one thing in shrinkage though. If a cloth depends on a light beat-up for its hand, more residual shrink must be left in than if the hand can be hard, because it is hard to build in softeners that will mock in a packed cloth a light beat-up.

I cannot pass any comments on the yarn sizes or twists used, but I can suggest that processing from the warpers on be checked for excess tension that will cause the warp to be woven in a stretched condition. The wet finishing, if such a process precedes the Sanforizing, should be checked for excess tension that will deliver the cloth to the cans in a stretched condition.

Answer No. 5. Regarding shrinkage in a 38½-inch 51x44 2.90 fabric. We doubt very much if the amount of shrinkage can be changed any by changing the warp and filling twist multipliers. The warp twist multipliers used are exactly the same as we use on these yarn numbers.

On some types of loosely woven fabrics the shrinkage will run as high as 18 per cent and we have found a different amount of shrinkage in the same weight goods made with three and four harness. We doubt if the twist multipliers had any effect as the type of weave is usually the determining factor in the amount of shrinkage.

Answer No. 6. Judging from the construction of 51x44, 2.90 weight, 38½-inch wide, 15 per cent shrinkage is not too much to expect, especially if on a four-harness or five-harness weave. On our four-harness work with a construction of 70x40 we have around 13 per cent shrinkage. This shrinkage is hard to get out without a lighter Sanforizing blanket and then it may be necessary to run the goods two or three times. We find that a few more picks per inch will also decrease the shrinkage and in this case more ends per inch will help.

Concerning the twist in the warp and filling, as far as our experience, the filling twist multiple should be all right. The twist multiple for the warp might possibly be fifteen points less or about 4.60. We think that he might be able to get some of this shrinkage out in finishing or on the dry cans if he has any means of governing the speeds of different stacks.

Answer No. 7. I note that a mill is making a fabric that, upon Sanforizing, shows a shrinkage of 15 per cent, which they feel is too much. We presume he means lengthwise, or shall we assume that it is both width and lengthwise? Now, while it is true that twist in the yarns does have an effect on shrinkage—as a rule, more twist, more shrinkage—yet in the case mentioned, the twists that he names do not seem very excessive. Of course it would be better if he could make his warp 4.50 times the square root, and the filling about 3.25. However, this change is not going to overcome such a drastic shrinkage as 15 per cent.

Of course, we are talking more or less in the dark, not having seen the fabric, but being a dobby weave, we will have to assume that the construction of the cloth is the trouble in this case. We recently had a special twill fabric presented to us with a light warp and a heavy filling which shrank over 30 per cent in the warp, so that in these high shrinkages the trouble is usually in the construction of the cloth and not the twist of the yarn.

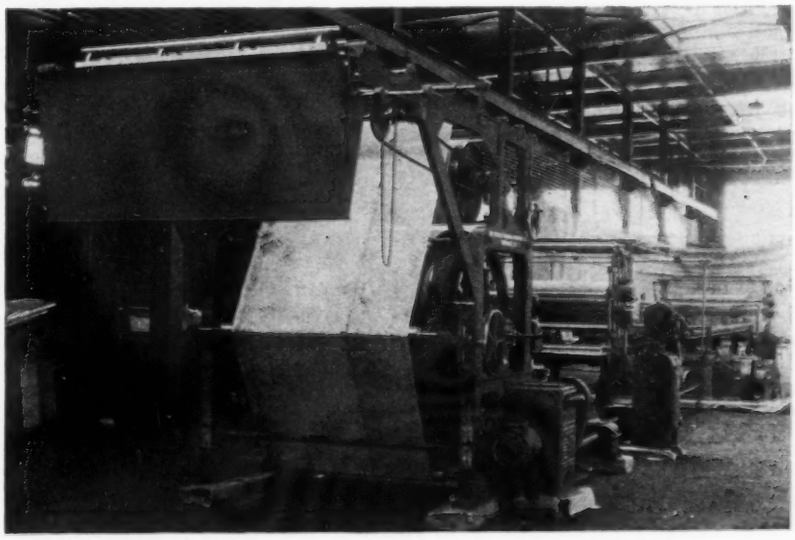
Very often these fabrics with excessive shrinkage are fully mercerized before Sanforizing, and in some instances this mercerization under tension both warp and filling will set or kill from 30 to 50 per cent of the potential shrinkage of the cloth as shown before mercerization. In this case where he mentions box looms in colored yarn, the mill would have to first test the fabric to see if the colors will be changed by the caustic in mercerization.

Very often this mercerization process will pay for itself. For instance—of course we know nothing about the value of the cloth that we are discussing—let us assume that it is worth 20 cents a yard; then if you can save, say 40 per cent of the shrinkage, which would be 6 per cent and which applied to 20 cents would be 1¼ cents, and I doubt if the mercerization would cost over one cent per yard. Furthermore, if, during the process of mercerizing, the fabric were held out to grey width it would also result in a wider fabric after Sanforizing.

In other words, some of the potential shrinkage would be killed each way. This mercerization would also probably clean up the fabric and give the colors a better luster, but as stated before, the whole thing depends on whether or not the colors will stand the caustic treatment.

THE foregoing opinions were passed along to the original inquirer and to all taking part in the discussion, and the man who asked the question in the first place volunteered the following additional information:

I have found this, which may be of interest to the readers of COT-



A delivery end view of a sanforizing and tentering range. . . .

TON, that in colored goods fabrics containing twill weave, there are times when the finishing plant is a bit careless in Sanforizing the fabric so that the smooth side will have the twill running in the right direction one time and on other pieces have the smooth side running in the left direction. When the cutter gets these goods, if he matches up the twill in his garments there will be a shade in the cloth. This shade is actually an optical illusion caused by finishing, as it has been our experience that on a Sanforized piece of cloth the rough side, the one next to the Sanforizer blanket, never has the same cast as the smooth side, the one next to the cylinder, due to the fact that fibers are laid differently. If a person is not familiar with this situation he will get quite a number of rejects for shady cloth when in reality the Sanforizer has caused the trouble.

Any finisher of colored goods knows that he can take a piece of cloth fifty yards in length woven on the same loom, calender half of it and not calender the other, and there will be a slight shade. This same principle is applied in the Sanforizer.

We have also found that on some occasions the Sanforizer has gotten too hot, causing shades in our cloth, due to a scorched condition that is only perceptible under a very strong glass. The mill will again get rejects, and upon examination of the cloth normally will think that the rejection is justified, when in reality the trouble is at the Sanforizing plant.

Regarding the opinions expressed in the seven answers, I do not hesitate to say that though they are from seven sources the experiences seem so close that the entire group could have well been written by one man. This is very interesting to me and is valuable information.

I have found in some of our tests that shrinkage is controlled somewhat by twist, but the best controlled shrinkage will have to be figured on a basis of balancing the fabric. In other words, the sley and the pick will make a great deal of difference in each fabric and the twist in the warp and filling will have to be adjusted with the thought in mind of balancing the tension in the fabric. This is my own theory and frankly I do not know just where to start in working out a rule that will be at all constant. However, I am convinced that this is the problem after reading the opinions of these men, along with information I have picked up, as some people having their own Sanforizer go up on the filling twist and some come down on other fabrics not similar, and they both are getting good results in shrinkage.

What I was mainly concerned with was that the plant doing our Sanforizing reported to our sales office that the shrinkage in our fabric should be much lower than 15 per cent. The finishing plant compared our fabrics with another of the same weight, but of an entirely different construction, and I do not see how the comparison could be made.

◆◆◆

Effect of Embargo on Japanese Silk

As a result of the recent signing of the Rome-Berlin-Tokyo Axis agreement, the textile industry began to weigh the possible effects of a cessation of Japanese raw silk imports into the United States, points out the *Rayon Organon*, published by the Textile Economics Bureau, Inc.

"An embargo on Japanese raw silk imports would be a great tragedy to the hitherto friendly relations between Japan and America," states the publication. "Unquestionably, there would be some aggravations all the way from the yarn fabricator to the final consumer. But to say that such an embargo would cause widespread unemployment and other hardships to any except those in the raw silk trade would be incorrect. In fact, on the score of employment, the use of domestically-made textile fibers undoubtedly would result in an increase in employment in this country." Should an embargo come to pass, the belief is that "the textile industry can carry on."

The present capacity of the rayon yarn industry is about 32,000,000 pounds monthly, based on current deniers spun. By next year, this figure will have been increased to around 35,000,000 pounds per month.

Consumption of silk in the United States for the first eight months of 1940 has approximated 2,700,000 pounds monthly, of which 97 per cent or 2,600,000 pounds was used in hosiery. About 78 per cent of this silk was imported from Japan.

Should the Japanese supply of raw silk be shut off, the *Organon* says, the present production of nylon can provide for about 10 per cent of the current full-fashioned silk hosiery production, and machinery is being installed to double this nylon output by early in 1941. If silk imports from Japan were eliminated, the 2,300,000-pound monthly fiber deficiency could be made up by 650,000 pounds of nylon and the balance by increasing rayon yarn production plus a larger use of vinyon and the natural fibers.

◆

Powers Talks on Use of Resins and Plastics

D. H. Powers of Rohm and Haas Company, Philadelphia, Pa., addressed the American Chemical Society in Detroit on September 11 concerning the use of resins and plastics for the modification of textile fabrics. Dr. Powers pointed out that much work has been done in developing synthetic fibers to replace animal or vegetable fibers, and at the same time progress has been made in finding synthetic materials for use in modifying and altering natural, as well as synthetic fibers. He went into a discussion of the new synthetic resins and showed that new markets for cotton and rayon fabrics have been opened up through modifying cellulose fibers and fabrics with synthetic resins.

◆

Automobile Industry Uses Much Cotton

According to the Cotton-Textile Institute, Inc., the automobile industry is the most important industrial consumer of America's cotton crop. This industry will use 840,000 bales during 1940, with an anticipated use of 945,000 bales in 1941. Individual makes and models of 1941 cars will use between 51.4 and 80.9 pounds of cotton, depending on details of design and manufacture. Thus, the automobile industry will be responsible for 11 per cent of the 1940 domestic cotton consumption and for 6.8 per cent of American production. Principal automotive applications of cotton are upholstery, cord for tires, lacquers, artificial leather, top material, plastics, and mechanical rubber goods such as radiator, heater and brake hoses, webbings, insulation and numerous less conspicuous purposes.

CLOTH ROOM PRACTICE

(Part Seven)

By Ralph Perry

• This is Part Seven of a series of articles on cloth room practice and management. The first six installments appeared in the March, April, May, June, August, and September issues. As the series is nearing the end, if there are specific questions or problems you wished discussed, submit them to the editors. All articles are prepared by experienced mill men.

THE MANNER of getting cloth to the cloth room has not been discussed in detail in any of the preceding articles and in many mills it is a sadly neglected as well as expensive operation. Careless cloth men and cloth haulers cause many yards of remnants and seconds by wrinkling or soiling the ends of the rolls.

Up to some time ago we had a system where the cloth was handled three or four times before it reached the folder. The cloth was doffed off the loom by the weaver and placed in the alley. A cloth man would carry the cloth to the end of the alley and place it in the racks. The cloth hauler would remove it from the racks, place it on his truck and roll it to the cloth room. In the cloth room he would remove it from his truck and place it in the racks behind the folders.

The extra handling meant that the cloth had more chances of becoming wrinkled, required more hands and was also a back breaking job.

Skids and Lift Truck

A system was installed using a hydraulic lift truck and skids and all this extra handling was eliminated. Cloth doffers were installed and the weavers were given more looms. The skids are placed in convenient places around the weave room and as the cloth is doffed off the loom it is placed on these skids. When the skids are full they are carried to the cloth room one at a time by the cloth hauler with his lift truck. The skid is placed behind the folders ready for the cloth to be removed by the folder hands. This system eliminates the cloth being handled by the cloth hauler with the exception of rolling it to the cloth room. Each time he leaves a full skid he carries an empty one back with him thereby keeping them divided and in place.

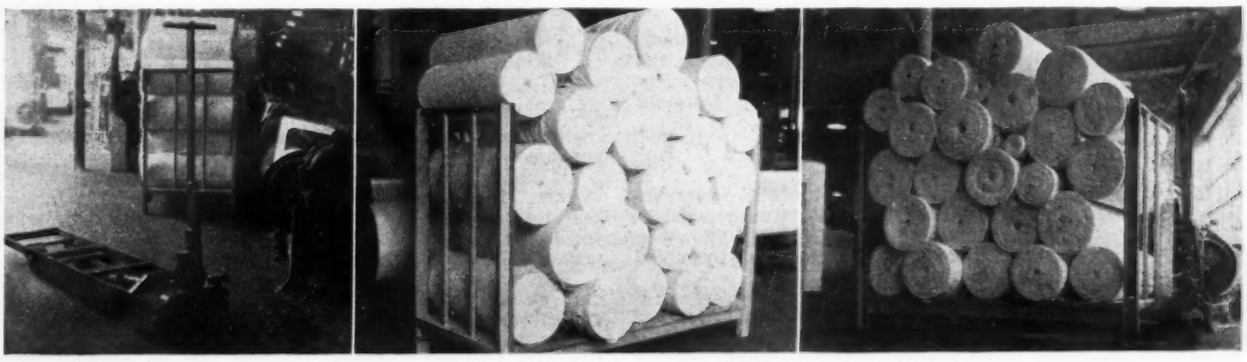
With this system enough saving was made to pay for all equipment in six months. Of course, the amount that can be saved depends on the amount of cloth to be hauled, the time required to reach the cloth room and the number of shifts being run.

"Showing-Up" Seconds

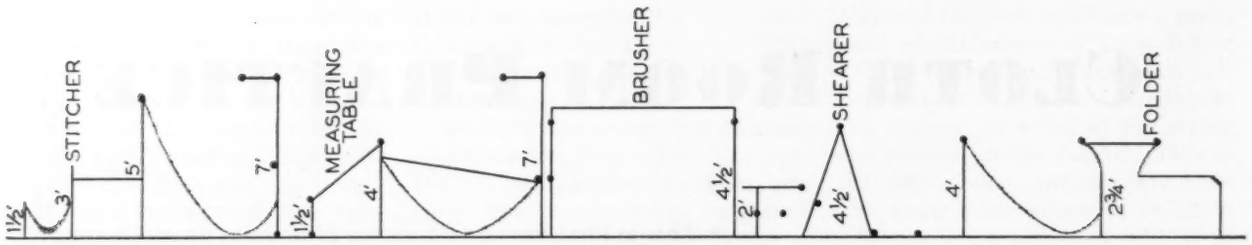
Another matter that has not been discussed in detail is the manner of showing seconds to the weavers. Different methods are used by the various mills and as a rule these methods require too much time of all parties concerned.

The ideal set-up to the writer's mind is for each weaver's stand to have a number. Place a long table in a convenient place in the weave room with numbers of the different weavers' stands stamped thereon. As the seconds are sent back from the cloth room they are stacked in their proper places and in this manner a weaver can walk by and readily see if he has made any seconds the preceding day.

An appointed time should be set each day for the weavers to report to the seconds table in place of the old custom of sending someone after them. A first class grader should be kept at this table



The lift truck and cloth rack as described in the accompanying article. Cloth is stacked in the racks and lift truck run under rack and carted to cloth room. Truck is returned to weave room. Rack of cloth remains in cloth room until cloth is removed.



The sketch above, which was not prepared by the author of this article, shows the arrangement of cloth room machinery in a mill having about 400 looms. It might be termed a "single-process" cloth room. This lay-out requires three employees, though if pick clocks were used (instead of an employee at the measuring table) two operatives could handle the processing satisfactorily . . . . . .

at all times. As fast as the cloth is shown to the weavers the grader can work it up, cut it where necessary and mark its classification. In this manner it is ready for baling when it is sent back to the cloth room.

Paying by the Piece

Another matter that is not given due consideration in some cloth rooms, as well as other departments in the mill, is the manner of paying the employees. Too many still depend on the old way of paying by the hour and then wonder why their labor cost is more than other mills even though the minimum wage is the same.

In the cloth room there are very few jobs that cannot be paid by the piece. Folder hands, graders, inspectors, press men, head sewers, shearing machine operators and in general, practically every employee can be paid on the piece-rate basis. We have found in going from an hour-rate to a piece-rate that in many instances production has been speeded up as high as 30 per cent. To combat with careless work we make periodic checks behind the employees. We even go so far as to go to the warehouse, bring back bales, open and re-inspect them. In this manner goods that have not been graded properly are brought to the attention of the inspectors and graders and through these means they are kept on their toes.

Cloth Room Arrangement

Too much attention cannot be paid to the equipment and the operation of a cloth room. The arrangement of the machinery should be such as to reduce to a minimum the distances between the points where the cloth must be handled, bearing in mind the necessity of ample light where the goods must be inspected.

Cloth rooms should be kept as clean and tidy as possible. If dirt and dust are allowed to accumulate it has ill effects on the minds of the inspectors and will cause them to grow careless in their work.

The construction and location should be of the best. Its equipment should be the most suitable for the different types of fabrics being manufactured so as to effect an improvement in the cloth between its leaving the loom and being packed into bales.

A mill's reputation is made or broken in the cloth room. I am not trying to say that the cloth room can take a piece of seconds and make first quality cloth out of it. What I mean is that careful and constant attention in this department will mean that only first quality goods, when specified, will reach the buyer. In this manner your mill creates favorable impressions in the buyer's mind and when he is again in the market you may be sure that he can well remember where his last shipment came from. Impressions like these may be the difference between running full time or curtailment of the plant.

◆◆◆

Haste

A doffer in the twister room was getting bobbins out of a box when a respooler tender, being in a hurry, threw some bobbins in the direction of the box without turning around. The bobbins struck the doffer's head, cutting a small gash in his head and leaving him with a severe headache.

The respooler tender was naturally very sorry about this, but had she looked before she threw the bobbins the accident would never have happened. Haste causes many accidents. Take your time.—*"Textile Safety", National Safety Council, Inc.*

◆

Budget Your Time

Time budgeting is a subject of importance to every supervisor. "Time budgeting" will eliminate "time alibis."

It is so easy to give "lack of time" as an alibi, when a bit of planning would have freed enough poorly-occupied time to accomplish the essential thing.

So many people say, "I never get time to do any reading." But, it is not lack of time, so much as it is *lack of budgeting time.* If you will get into the habit of reading at certain odd times when you are riding to work, waiting to see the dentist, waiting for your wife to finish dressing before going out, waiting for a meeting to start, or during the noon-hour, you will be surprised to see how much useful reading you can get done. Make a habit of keeping something in your pocket to read in odd moments when you would otherwise be idle.

When you are tempted to give "lack of time" as an alibi, just remember that the most important men, holding posts of the greatest responsibility in the world, have no more hours and minutes in the day than you do.—*"Management Information", Elliott Service Co., Inc.*

◆

The New Man

Spending more time with the new man, today, will save you much time, later.

If he is made to "feel at home," he will be a better worker. If you create a favorable impression with him at the start, he will do more for you, later. The impression you make on him is just as important as the impression he makes on you. Introduce him to those he will contact.

Explain company "plans", method of wage payment, pay day, clock system, employee activities, safety, various organizations.

Instruct him on his job. Warn him of special difficulties and accident hazards. Follow him up several times the first day and several days the first week.—*"Management Information", Elliott Service Co., Inc.*

Institute Studies Distribution

AT ITS 14th annual meeting in New York City, on Wednesday, October 23, The Cotton-Textile Institute provided its industry with one of the most constructive programs in the history of the organization. There was a general theme, to which the entire series of addresses were keyed, and each speech was of the highest order of value and interest.

The central theme of the meeting was, "What Can Be Done to Improve the Machinery and Methods of Cotton Goods Distribution" Speakers included top-flight specialists in several vital elements in cotton goods distribution, and their discussions, all of which were fresh, frank and stimulating, combined to provide a forum of thought on the general theme that may well be translated into constructive action for the industry.

G. H. Dorr, chairman of the board of the Institute, presided at the morning session, presenting first Claudius T. Murchison, president of the organization, to make his annual report to the members.

Address of Dr. Murchison

Dr. Murchison declared that the cotton-textile industry, during the past decade, has experienced a period of defensive adjustment, and announced definite plans for shifting the emphasis, in the Institute's work, away from the political and legislative paths it has followed since 1933, back to the sphere of economic activity, which predominated in the original plans of the organization when it was formed. "Until recently," he said, "we have thought of the industry's firing line as being at the seat of government. We have thought of our adversaries and also our friends as consisting mainly of the political representatives of the people in Washington. * * * But every industry should find its justification in the value which it creates for society. But such values have no bearing upon the policies of the state unless they are publicly recognized. The palladium of our liberties, industrial and individual does not come from the Congress, the courts of the President. It is in the state of mind of the American people. No industry in America is in so fine a position as the cotton-textile industry to contribute to the values of our economic life, and to the thinking which is so vital to democracy." The speaker declared, however, that the conception that the industry is made up wholly of spinners and weavers must be abandoned; "its scope must be regarded as including the cotton farmers and all the allied groups engaged in the ginning, marketing, compressing and transportation of raw cotton and also the processors of cotton seed. We must also regard as merged with us the selling agents, the converters, finishers, the cutting trades and all secondary processors of cotton yarn and fabrics. Likewise those industries whose major function is to provide textile equipment and supplies should be included. Beyond these is the great army of cotton goods distributors, the wholesale and retail merchants whose number runs into the hundreds of thousands with a volume of sales in cotton goods approximating annually four billion dollars."

Mr. Halstead

Dr. Murchison

Such an enlarged and co-ordinated group, he said, can adequately endeavor to achieve a strengthened economic basis for cotton by providing products which are more attractive, more useful for intended purposes, more varied in refinement of design, finish and texture, produced with greater manufacturing efficiency marketed with greater merchandising skill and supplied to the consumer in ever-increasing volume.

Turning to current events, Dr. Murchison discussed the cotton-textile industry's relationship to the national defense program, saying that the most timely comment on this subject would be in the nature of caution. "Generally speaking, the industry will meet the major requirements of the government in normal stride, promptly and easily and at low prices. Here and there, tight situations will probably develop but they will be temporary, and dealt with through the best means. Government requirements over a 12-month period will not exceed 10 per cent of a normal year's output, and after the first year certain items in total government demands will be even less. It is well to keep these proportions in mind for the sake of maintaining an intelligent attitude toward long range policies and possibilities."

In the face of an improved statistical position, expanding production, and low inventories, Dr. Murchison urged the industry to exercise careful scrutiny of contracts and caution in the stipulations of the character and terms of delivery. We have long since learned, he said, "that in times of peak activity a large body of blanket contracts, providing for indefiinte deliveries over long periods, such as four or six months, may turn out to be not a backlog but a millstone."

The Retailer's Point of View

John P. Nichols, managing director of Institute of Distribution, was the first of two speakers who presented the retailer's point of view as to improving cotton goods distribution. Mr. Nichols' organization embraces 134 non-grocery chains operating more than 15,000 units from coast to coast. The sales of cottons and allied cotton products of these companies aggregate approximately $800,000,000 annually: they have about 500,000 employees, and serve about 24,000,000 consumers daily.

Mr. Nichols reviewed the formation and development of the Cotton Consumption Council, under the auspices of The Cotton-Textile Institute, and others, showing that it provided a means whereby the American cotton grower, processor, manufacturer and retailer joined hands "in their biggest year-round co-operative promotional effort to make America conscious that cotton is the choice for economy plus style and service."

He then described in detail the activities of the members of the Institute of Distribution in the climax of this effort, which came in National Cotton Week in May. There were provided, by these stores, more than 175 miles of National Cotton Week window displays, approximately 400,000,000 lines (yearly) of newspaper advertising; radio programs reaching approximately 45,000,000 listeners.

Mr. Nichols displayed a large number of illustrations of posters, buttons and badges, advertising, etc., etc., used by the members of his organization in promoting cottons. He made it plain that, aside from a genuine desire to do patriotic service, these 134 chain store companies, as sellers of goods, wares and merchandise to the multitudes who depend, wholly or partially, on cotton for livelihood, naturally have an active

business interest in the promotion of cotton.

Lew Hahn, general manager of the National Retail Dry Goods Association, was the other speaker presenting the retailer's point of view. Mr. Hahn spoke extemporaneously, charging cotton-textile manufacturers and distributors with a tendency to sell cotton goods "at so much per pound", and thus ignoring the fiber's potentialities for glamour, appeal and style which would give it greater consumer acceptance. He strongly urged co-operative research into new finishes, methods and uses, by the industry collectively.

Institute Staff Members Speak

At the luncheon, there were brief talks on distribution by three members of the Institute staff. Paul B. Halstead, secretary-treasurer, related some of the activities and achievements in the past. Charles K. Everett, director of merchandising, outlined some of the current activities of his department, in the staging of style shows, assistance to manufacturers in the development of new fabrics, etc., and Miss Nova A. Eisnor, who has just succeeded Miss Catherine E. Cleveland as fashion director, spoke of the possibilities in the field of fashion for cotton-textiles.

A Converter's Point of View

The afternoon session continued the organized discussion of the meeting's central theme—improvement of distribution. The first speaker was Howard Veit, of M. Lowenstein & Sons, Inc. Mr. Veit declared that, in a legitimate merchandising field, giving publicity to every sale is not sound merchandising. Of great necessity to the industry is a constant flow of business, he said, and the present set-up penalizes that individuality which is a part of the able trader and which in the normal course of events in any industry allows the more able to profit to a greater degree than the less able. There is, he continued, "an inflexible law known as supply and demand. From your operations one would believe that you never heard of it. Obeying its precepts would mean that you would create a demand for your products before you created a supply. Instead of creating a legitimate demand by whetting the appetite of the consumer, you seemingly know only one method—some accident, some lucky break, that will create a bull market for you, that will sell your products automatically and bring profits to your mills to which you are not entitled, and which you always give back in the subsequent debacle. The one great cardinal principle of distribution is to sell goods when the buyer wants to buy. That cardinal principle is violated by you more often than any other principle of sound distribution."

The converters are the mills' most important customers, Mr. Veit declared, and should be more definitely a part of the planning and program of the industry in arranging its distribution policies. "Might I suggest to you mill men that you personally become better acquainted with your major distributors, the converters—that you gain for yourself a much more concrete knowledge of the problems that exist in our business. It is my personal observation during the past five years that the most successful among you are those who have been cultivating that personal contact. You would learn, for example, how we have to judge what type of cloth will be salable six months from now, what type of styling may be wanted, besides all the other problems with which we have to deal."

Mr. Veit then showed, with models, several examples of recent styling in cotton goods, illustrating how ingenious conversion of commonplace fabrics result in glamour and style that command high-bracket prices. Included were several cotton garments that were sold at prices up to $115.00, and Mr. Veit also showed duplications of the high-price lines priced for mass consumption.

"We have a product which can be and should be promoted," he said. "Why can't we raise a large fund in our industry, for a national advertising campaign to extol the many virtues and advantages of cotton? I believe the converter would be glad to make himself a part of such a program.

"The industry, as an industry, should also have a research laboratory to develop new uses for cotton, new finishes for cloth, etc. No one company is large enough to do this, but the industry is. The Cotton-Textile Institute should be the agency through which these things could be accomplished.

"I want to leave you with a final thought: What percentage of your product is bought, and what percentage of your product is sold? I believe that I do not exaggerate in saying that fully 90 per cent of your product is bought and only 10 per cent sold by your efforts. When you reverse these percentages, you will have a good business."

The Broker's Function

Sidney Scheuer, of Scheuer & Company, spoke next, discussing the broker's viewpoint on the subject. Mr. Scheuer gave a detailed description of the functions of the broker in cotton goods distribution, declaring the broker to be an essential element in the picture when he renders the constructive services found in the modern brokerage establishment.

Industrial cotton goods—which account for more than one-third of the total domestic distribution—were discussed by Robert C. Kelley, chairman of the textile committee of the National Association of Purchasing Agents. In this field, he said, cotton fabrics and yarns are used mainly for their utility value, shorn of the embellishments of style and eye appeal; being evaluated from its physical and chemical characteristics. He felt that as an industry, cotton-textile producers have neglected this field, declaring that undoubtedly the greatest reason for the acquisition by the large tire companies of their own fabric mills was closer control of quality, rather than dissatisfaction with prices or services.

"The cotton textile industry has neglected to follow new product developments in the industrial fields and to endeavor to maintain and increase its share of this market. * * * I believe the field is ripe for the development of some new constructions in the industrial field. I know of several products where the range of constructions used hasn't changed for 20 years. Perhaps they are the best for the purpose, but it wouldn't do any harm to have a few of the experts look them over."

Mr. Kelley strongly urged more research by the mills, recommending that this be done jointly, to find new products and also as insurance against some other industry stepping in and taking away the business. He suggested, specifically, more intensive cultivation of the customers in the industrial-goods field, better trained representatives, etc.; and mentioned as one field with great promise of development that of the finishing of fabrics.

"While we think of industrial fabrics as mostly in the gray state, many uses require finishing operations, and to my mind this is where you can best meet your newest and most active competitor, the plastic fields."

Following the general meeting, there was a brief meeting of the Institute's board of directors.

Co-ordination Conference

On Tuesday, October 22, preceding the Institute's annual meeting, Dr. Murchison held another in the series of co-ordination conference of trade association executives, which he began several years ago. At this meeting, the Institute brought together the active directing heads of all of the national, regional, state and functional associations in all phases of textiles, for a fruitful, informal review of current and prospective problems affecting the various branches mutually.

The 29th National Safety Congress

CHICAGO was the scene of the 29th National Safety Congress and Exposition, held during the week of October 7-11 under the auspices of the National Safety Council, Inc., 20 N. Wacker Drive, Chicago. Pointers on safety brought out by practical mill men speaking before the textile section of the Congress were especially helpful, and are of interest to the industry.

Competition to Promote Safety

"Although safety is safety's own reward, one of the best ways to sell safety to a group of industrial workers is to make it worth their while with contest awards," said Phil J. Monroe of the Mooresville (N.C.) Cotton Mills. Mr. Monroe went on to explain that it is through competition that workers can be educated to be safety conscious, and it is then that they really feel that they become part of the safety movement. He outlined a safety program in the Mooresville plant which reduced lost-time accidents from 29 through September 1939 to only one through September 1940. The speaker added that the company's insurance rate has been lowered to such a degree that very little is heard about it now from the mill treasurer.

Determine Causes of Accidents

Another Congress speaker, John J. Burger of W. J. Dickey & Sons, Inc., Oella, Md., said that accidents will happen unless the mills take the trouble to eliminate the causes, and he continued that it is first necessary to investigate the situation or plant and determine what the causes of the accidents are. "After finding the causes of the accidents it will soon be apparent that there are almost as many methods to use [in eliminating them] as there are types of accidents," he said.

He outlined particular cases wherein direct or indirect methods, and psychological and educational means of preventing accidents were in use. He further contributed that "the management is the spark behind the safety program. In the case of our plant the management is attempting to give everyone an opportunity to contribute [to the safety program] by decentralizing safety activities and responsibilities. Departmental safety meetings are held on company time, where workers discuss dangerous practices and corrective safety methods."

All Benefit by Safety Program

Another featured address of the Safety Congress was by S. C. Hickok, employment manager of the Pacific Mills print works division, Lawrence, Mass. Mr. Hickok read from letters of various divisions of the textile industry and from public officials which showed the value placed by each on safety in the manufacturing plants of the textile industry.

The first letter was from the general superintendent of the plant, and besides the humane side, showed that by reducing the number of lost-time accidents from 62 in 1936 to only three in 1939, the reduced premiums are helping to reduce the cost of finishing the cloth—a saving of nearly $5,000 annually. The bond between the worker and the management also may be happily strengthened by the safety education—for both parties are working toward the same end.

"Reduced safety premiums are helping to reduce the cost of finishing our cloth."—General Superintendent.

"Efficiency and sincerity in manufacturing form the necessary background for successful selling."—Selling Organization.

"The finest thing my employers have ever done for me and all my fellow employees is to try to make us safety conscious."—Mill Employee.

Safety Aids Selling

The letter from the company's selling organization brought out that efficiency and sincerity in manufacturing form the necessary background for successful selling, and one very important measure of the sincerity of a manufacture and of the efficiency of the plant is the safety record which he compiles. "With the knowledge that these invaluable safety factors exist at the plant, the sales department can work with greater confidence and greater enthusiasm; the advertising department can do its job with increased assurance that the company is the kind that will back up every justifiable claim that it makes for its product".

An insurance company letter read by Mr. Hickok touched on the economic waste and suffering incident to accidents, and "it is one of our important functions as an insurance company to assist our policyholders to reduce this waste and suffering . . . through cooperation many splendid records of accident reduction have been made which in turn has produced for managements savings in lowered insurance costs which can be classified as direct, and other savings such as keeping field men on the job, lack of disruption of production, the prevention of spoilage of material, etc., which can be classified as indirect savings."

Letters from the mayor of the city and the governor of the state showed their interest in safety campaigns, and the importance of safety in industrial operations.

Employee Appreciates Safety Teachings

The employee's letter read to the Congress by Mr. Hickok is quoted in part: "It [safety] is a very vital factor in my life and in the lives of my family. . . . Every time I take a chance with safety I'm gambling, and if I gamble too often, I'm bound to lose, by the law of averages.

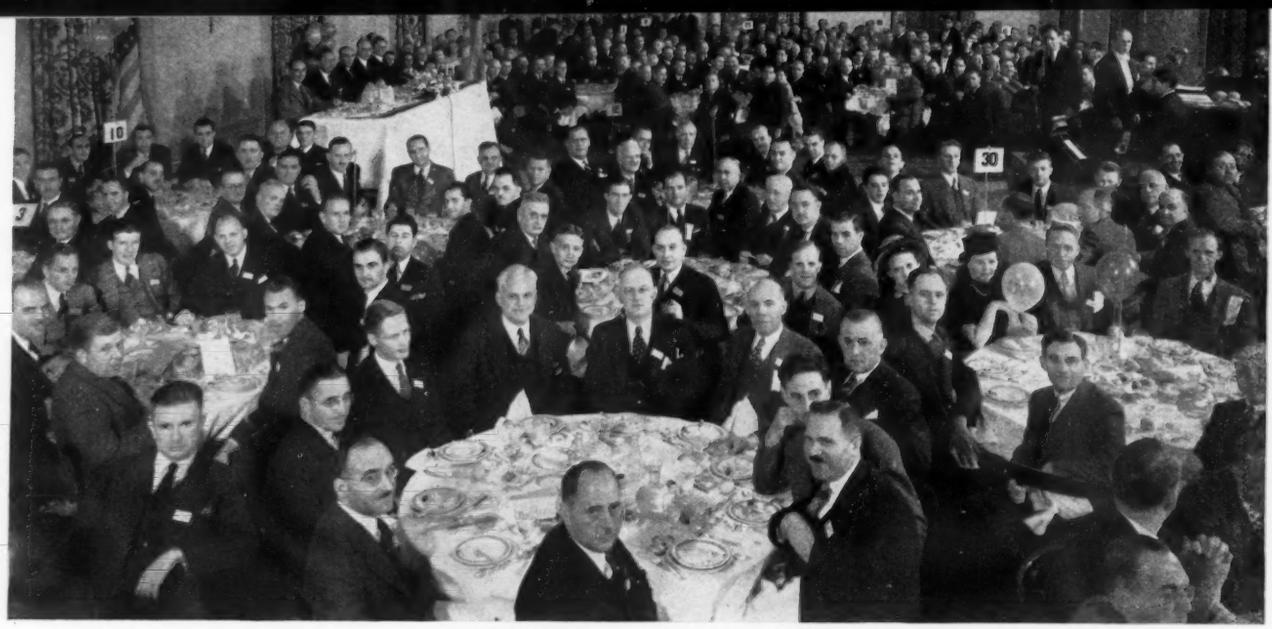
"Suppose I only get a minor injury and am home only two or three days. I've lost more than I can afford because my wages are not large enough to miss even that short time without feeling it. Then, there is the physical pain I must endure. If I lose a hand or an arm, a leg or an eye, I not only have the pain to bear and money to lose, but I have permanently decreased my earning power with its effect on my family and my own mental anguish.

". . . I think the finest thing my employers have ever done for me and all my fellow employees is to try to make us safety conscious and to practice safe methods in everything we do."

The National Safety Congress and Exposition is composed of all types of industry. However, there are special meetings for specific industries, such as textile, where those in attendance may discuss their mutual problems.

◆

Michigan Alkali Company, Wyandotte, Mich., on October 17 celebrated its 50th anniversary by the presentation of gold watches to 567 employees, all of whom have been with the company for a quarter of a century or longer. Presentation of the gifts was made by Emory L. Ford, president of the company.



New York Meeting of AATCC

THE American Association of Textile Chemists and Colorists held its 20th annual meeting in New York City, on October 18 and 19, with the New York section as host; and in leaving its "teens", this outstanding society enjoyed a program of excellent technical papers, and a delightful entertainment program—with the largest attendance, by far, in the history of the organization.

New Officers

Carl Z. Draves, of General Dyestuff Corporation, New York City, presided as president of the organization. Dr. Draves has been re-elected by letter ballot for a second term. The retiring vice-presidents are Arthur R. Thompson, Jr., of Ciba Co., Inc., Charlotte, N. C., and Duncan Ferguson, of Shelton Looms, Shelton, Conn. They were ineligible for re-election, having served three years in national offices. To succeed them, Thomas R. Smith, superintendent of dyeing, Wiscassett Mills Co., Albemarle, N. C., and Roland E. Derby, consulting chemist, Boston, Mass., were named for one-year terms. Harold C. Chapin, associate professor of chemistry at Lowell Textile Institute, Lowell, Mass., remains as secretary; and W. R. Moorhouse, of Boston, manager of National Aniline & Chemical Co., as treasurer. Professor Louis A. Olney, of Lowell Textile Institute, one of the organizers, continues as president emeritus and chairman of the research committee.

Plans for the New York meeting were in charge of P. J. Kennedy, of E. I. du Pont de Nemours & Co., as general chairman, assisted by various committees from the New York section. Walter M. Scott, chief of the cotton chemical finishing division of the Southern Regional Research Laboratory, New Orleans, La., was chairman of the technical program committee. The efforts of these men in the arrangement of the program, its occurrence in New York during the World's Fair, and the continuing growth and value of the association produced an unprecedented attendance which is indicated by the presence of more than 1,000 at the annual banquet, and of easily more than 600 at the technical sessions on Friday afternoon and again on Saturday morning.

Novel Program Features

Two new features were introduced, with outstanding success, at the New York meeting. One was the staging of a sectional paper contest, in which each of the eight sections or geographical groups in the organization submitted a paper on a technical subject of its choice, awards being made for the first, second, and third choices of the committee of judges, appointed from each of the sections. The other new feature was the operation of concurrent technical sections on Saturday morning; one a symposium on evaluation of the properties of finished textiles, and the other a symposium on chemical and dyeing aids for the textile industry.

The value of both of these ideas was readily demonstrated by the surprisingly large attendance at each session. Even in commodious rooms, every technical session was attended by an overflow crowd, something rarely experienced in such meetings. Operation of concurrent sessions on Saturday morning permitted members to select for attendance the one of greatest interest to them, respectively, and likewise provided more time for the presentation and discussion of each paper.

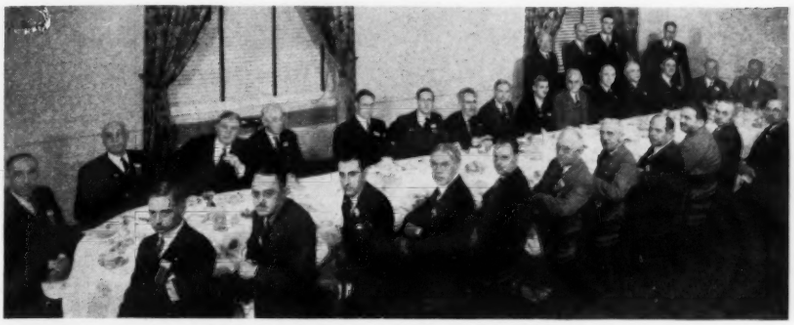
The inter-sectional contest on Friday afternoon proved its value in affording an unrestricted opportunity for participation in several instances by members whose company policy may have prevented this under different rules. The papers were in no way identified with the authors, and while each was presented at the meeting by a member of the section, his appearance in this manner in no way implied that he had any connection with the preparation of the manuscript. Furthermore, in practically each instance, the section's paper reflected some chief interest or operation of its particular area, with the result that the symposium presented an excellent cross-section as to subject matter of interest to practically every division in the industry.

The committee of judges, consisting of one representative from each section, with Professor Olney as the ninth member, evaluated the papers on three major points: general scientific and technical value was accorded 50 per cent; originality or record of discovery, 28 per cent; and presentation, 22 per cent. On this basis, the awards were made as follows:

First prize, $50.00: To the Rhode Island section, whose paper on "The Effect of Modern Finishing Agents in the Light Fastness of Cotton Colors" was presented by William H. Cady, chief chemist, U. S. Finishing Company, Providence, R. I.

Second prize, $30.00: To the Southeastern section. This paper was entitled, "Some Observations on the Tendering of Vat and Naphthol Dyed Army Duck on Total Exposure to Weathering", and was presented by Alfred R. Macormac, professor of chemistry, textile department, Alabama Polytechnic Institute, Auburn, Ala.

Third prize, $20.00: To the Philadel-



National council and research committee at luncheon. . . . .

phia section, for a paper on "Variables Encountered in Fade-Ometer Testing", presented by Charles A. Siebert, of E. I. du Pont de Nemours & Co.

The other section papers, with the names of those presenting them, were:

South Central section: "Development of Hosiery Processing in the South", presented by Walter E. Hadley.

New York section: "Informative Textile Labeling", presented by Henry F. Herrmann.

Midwest section: "An Analysis of the Split-Bath Method of Dyeing Silk Hosiery", presented by A. G. Alexander.

Piedmont section: "Screen Printing in the South", presented by William A. Wolhar.

Northern New England section: "What is New in New England", presented by Henry Grimes.

The winning paper from the Rhode Island section described a study of the effects of cation active finishing agents on the light fastness of fabrics dyed with direct dyes. About 20 of these compounds, whose chemical constitution was known, were applied to spun rayon dyed with various dyes, and the effect on the light fastness of these dyes was determined by Fade-ometer tests. In some cases, particularly with certain "fast-to-light" dyes, it was found that the color was completely destroyed in not over 15 hours. It was also observed that some of the cation active compounds had a marked effect on the shade of the dyeings.

Various attempts were made to determine whether the cation active compound and dye combine chemically in definite proportions. It appears probably that such a combination, if formed, is not very stable. However, attempts to restore the original light fastness of the dye by removing the cation active substance were not successful. Experiments were made to determine under what conditions of time, temperature, concentration, etc., the maximum effect on light fastness is produced, and an attempt was made to correlate this with the amount of cation active substance actually taken up by the fiber, and determined by subsequent extraction with solvents or other methods. The actual cause of the abnormal fading produced by these compounds was not determined, and the paper recommended that the matter should be investigated further.

An exhaustive test to determine the degree of tendering of vat and naphthol dyestuffs on army duck was reported in the paper from the Southeastern section which was awarded the second prize. This test involved the exposure of a large number of samples of army duck to weathering over an extended period of time. Special racks to hold the dyed samples exposed, as well as the gray control samples, were erected on the roof of a building not liable to industrial gases or other artificial elements; a careful record of each sample was taken, and compared with the standards that were not exposed. Tests for breaking strength of the samples, at stated intervals during the exposure, were made and recorded. The exposed samples were taken to a group of eight experienced men and their judgments as to the degree of fading in each instance were averaged, and related to the strength tests. The conclusions of the paper, while restricted to the time and number of samples involved, indicated a clear relationship between tendering or loss of strength and the fading in each case; and it is proposed to pursue the investigations further.

The Philadelphia section's paper reported on exhaustive test of Fade-ometer results, covering a large number of samples and involving differences of procedure, particularly as to the type of cloth holder used; while the information was valuable, no definite conclusions were drawn.

In a brief business session at the conclusion of the sectional contest on Friday afternoon, Secretary Chapin reported on the affairs of the organization, stating that its membership is now the highest in its history.

Friday evening was devoted to an informal dinner, the demands for seats being so great that there was an overflow of several hundred guests into second room; and an excellent cabaret show provided for this event was staged in each dining room. Speakers included President Carl Z. Draves, J. E. Meili, chairman of the New York section, and Newbold Morris, president of the City Council of the City of New York.

At the symposium on the evaluation of the properties of finished textiles on Saturday morning, Erwin J. Saxl, of Saxl Instrument Company, spoke on "Wear and Porosity"; Ruth E. Slabaugh, of the University of Missouri, discussed, "The Use of the Black Carpet Beetle in the Testing of Mothproofed Materials"; A. R. Macormac, of Auburn, presented a description of "A Simple Apparatus for Testing Fireproofed Fabrics, prepared by Emily W. Akin and himself; Kenneth H. Barnard, of Pacific Mills Print Works, reported for the association's committee on crease-resistance and permanency of finish; and George A. Slowinske, of E. I. du Pont de Nemours & Co., spoke on "The Evaluation of Water-Resisting Textile Finishes".

The concurrent session Saturday morning on chemical and dyeing aids for the textile industry included a paper on "Shrinkproofing of Wool with Bromine", by Ralph L. Ericsson, of Warner Chemical Co.; a discussion of the uses of tetra sodium pyrophosphate in the textile industry, by Paul Logue, of Monsanto Chemical Co.; "The Dyeing of Nylon with Acid Colors", by P. H. Stott, of E. I. du Pont de Nemours & Co.; "Surface Active Agents in the Degumming of Silk Hosiery", by O. M. Morgan and H. Seyfreth, of National Aniline & Chemical Co.; and Part II of "Microscopic Observations of Wool Dyeing", by G. L. Royer and H. E. Millson, of Calco Chemical Division, American Cyanamid Co.

Saturday afternoon was devoted to sightseeing and other entertainment.

The annual banquet was held on Saturday evening, with Past-President Elvin H. Killheffer as toastmaster. Speakers included Carl Z. Draves, president, who presented a past-president's pin to his immediate predecessor, Alban Eavenson, of Philadelphia; Claudius T. Murchison, president of The Cotton-Textile Institute, who discussed research in cotton and described the part the colorists and chemists play in this work; a humorous address by Edward Ford; a discussion of present economic and political conditions by H. L. Derby, president of the American Cyanamid & Chemical Corp.; and a discussion of "Woolen Textiles from the Army Viewpoint", by Col. Vere Painter, of the Quartermaster Depot, War Department, Philadelphia.

The concluding event of the convention was a luncheon held on Sunday at the New York World's Fair, which had designated the day as special AATCC day at the fair. At this luncheon, Professor Olney presided and announced and presented the special awards in the sectional paper contest.

National Association Holds 86th Annual Meeting in Boston

The Slater Mill, whose founding 150 years ago was celebrated at the Providence convention. . . .

THE National Association of Cotton Manufacturers held its 86th annual meeting at the Providence Biltmore Hotel, Providence, R. I., October 9-10, and in co-operation with the Rhode Island Textile Association and the Old Slater Mill Association, planned a program to commemorate the 150th anniversary of the founding of the Slater Mill at Pawtucket, the first power-driven textile mill in the United States.

In the annual business session, Russell T. Fisher was re-elected president of the Association. Vice-presidents re-elected are Charles F. Broughton, treasurer, Wamsutta Mills, New Bedford, and Ralph C. Perkins, treasurer, Pilgrim Mills, Fall River, and Queen City Cotton Company, Burlington, Vt.

At the first morning session George W. Gardiner traced the life and progress of Samuel Slater and his contribution to the American textile industry, and to the factory system of America.

Mr. Fisher read the secretary's report on the activities of the Association throughout the year, and its work in legislative matters. He also traced government rulings affecting the cotton manufacturers, and reported on a series of overseer's meetings that were held during 1940, saying that "those mills that have not been sending their overseers to the meetings are losing an opportunity to broaden the education and ability of their men."

Progress reports were made by chairmen of various sub-committees, the cotton committee reporting on revisions in cotton standards and the freight bureau committee on its work.

In his annual banquet address the president of the Association pledged for the Association its unqualified support to the country, whether it be for defense only or for war if it should come. He explained that no serious difficulties have been experienced in obtaining the cotton textile requirements necessary for preparedness, and he anticipated no great difficulty along this line.

Mr. Fisher brought out that almost without exception fabrics are selling today at a price which leaves the margin of profit less than on business done a year ago, showing that the business received through the defense program has not been extremely profitable.

M. D. C. Crawford, research editor of Fairchild Publications, delivered an interesting address on the cotton industry's contribution to true democracy, a timely subject.

A feature of the meeting was the panel discussions held on various subjects. Harold F. Browne, director of the management research division of the National Industrial Conference Board told the Association members plainly and repeatedly that they would

Mr. Fisher

do well to become up-to-date in their views on dealing with labor, saying in part that "you can't buy labor off today with some proposition and thus avoid union organization if the employees want a union. He contended that employers have bent backward too far in their fears of the Wagner Act." It was also his observation that NLRB attorneys can do some amazing twisting of the intentions of the phrases in the law.

George W. Taylor of the Wharton School maintained that there is still a definite need for a personnel department in the textile plants, even if the employees belong to a union, and that it is important to have research in connection with the Wages and Hours Act, just as it is in technical phases of the industry.

Arthur Besse, president of the National Association of Wool Manufacturers, took part in the panel discussion, going into the national defense plans which will entail an expenditure of 15 billion dollars.

The goal of a domestic cotton consumption of 10,000,000 bales, and the plans to accomplish this through the co-operation of The Cotton-Textile Institute and the National Cotton Council was explained by Claudius T. Murchison, president of the Institute.

Later, in further panel discussion, Gustavus J. Esselen, industrial chemist of Boston expressed the forecast that silk will be used less and less, except for special purposes, and that cotton will continue to be used as a textile fiber, and as a chemical raw material. He also touched on the finishing materials developed to increase wearing qualities of the fabric.

John F. Tinsley, president of Crompton & Knowles Loom Works told of improvements made in textile machinery.

The meeting of the Association also had its social side, with visits to the old Slater Mill, golf tournament and clambake.

Carolina Cooperative Council Meets at Spray, N. C.

Governor Clyde R. Hoey was the principal speaker at the 20th Anniversary meeting of the Carolina Cooperative Council held at the Central Y. M. C. A., Spray, N. C., October 19. Luther H. Hodges, general manager of the manufacturing division of Marshall Field & Company, introduced Governor Hoey. The Carolina Cooperative Council is composed of key men in the manufacturing division of Marshall Field & Co. from the rank of loom fixers up to the general manager and has a membership of around 500 men. The organization was formed in 1920 and has had a most successful history. Monthly meetings are held from September through May of each year and during the summer, a picnic to which wives and sweethearts of all members are invited. The December meeting each year is featured by a big Christmas banquet.

Carders and Spinners Meet at Clemson

Report of divisional meeting of Southern Textile Ass'n

Left, Mr. Morton, chairman; right, Mr. Splawn, discussion leader

THE Carders and Spinners section of the South Carolina Division of the Southern Textile Association held its regular fall meeting in the new textile building at Clemson College, Clemson, S. C., Saturday morning, October 12, and discussed practical operating questions from a prepared questionnaire. The meeting was in charge of W. T. Morton of Monarch Mills, Lockhart, S. C., and technical discussion was led by W. W. Splawn, Kendall Company, Pelzer, S. C.

After the address of welcome by Dr. Poole, president of Clemson College, the group heard a patriotic and inspirational talk by Major Heyward Mahon of Greenville, a director of the South Carolina Defense Council. Major Mahon backed up the defense program one hundred per cent and told the mill men that they could aid the program by "doing the job you are now doing as well as you can". He insisted that the textile plants should experiment in the making of government goods so that they will be ready to serve their country in this capacity when the time comes. In answer to a question from the floor, he explained that the government is lifting some of the regulations pertaining to learners under the Wages and Hours Act so that the plants can train more employees.

The first question concerned the use of humidifiers in the card room and the amount of humidity carried in the room. On a show of hands it was seen that more mills have humidifying equipment in the card room than do not. A member said that he keeps from 55 to 58 per cent relative humidity throughout the entire room, and R. T. Stutts, Woodside Cotton Mill Co., Simpsonville, S. C., said that his also was kept at 55 per cent, and asked if any of the mills were equipped with the atomizer type of equipment in the card room. One member present said that his plant uses the atomizer type humidifier equipped with a reducing valve and "likes it fine".

This brought another question, "Does anybody have different percentage of humidity around the roving frames and at the cards and drawing frames?" to which he received an answer that 45 per cent relative is kept at the cards and 55 per cent at the roving frames, explaining that if there is too much humidity at the cards they will load up. The foregoing is on western cotton. Still another man said that he keeps from 50 to 55 per cent relative humidity at the cards and from 60 to 65 per cent at the speeders on 1-inch cotton. A representative from Gaffney, S. C., who has long draft slubbers in the card room, keeps around 52 per cent relative humidity at this point and gets better running work at this percentage. He has no partition between the cards and the slubbers, but uses a different nozzle in the heads to reduce the percentage of humidity. He said that if the humidity gets up around 55 to 60 per cent relative at the slubbers he has lap-ups.

More Stock in Card Cans

The second question asked for experience with the spring tension device on card calender rolls, used to increase the amount of stock in card cans. Several of the men present have cards so equipped. J. Manning Bolt, Chadwick-Hoskins Company, Charlotte, was called on and he explained that some of his cards were equipped with the device at one time but that they "did not last long", and he went on to tell that he did not receive satisfactory service from them. He pointed out that in his plant they damaged the fibers of cotton and lowered the breaking strength on 30s yarn from 60 pounds to around 40 pounds. He got about 40 per cent more stock in the cans.

The chairman considered that with 40 per cent more stock in the cans there should be less piecing and that consequently it would seem that the breaking strength would increase instead of decrease. Mr. Bolt agreed that it caused fewer piecings but contended that the spring device packs the sliver so that he could not get an even drafting action at the drawing because the same tension could not be kept. However, he said, it did extend the creeling time at drawing and also the doffing time at the cards, but added that "it makes the drawing run worse". His drawing frames are equipped with metallic rolls.

At this point Mr. Stutts asked why the same result could not be obtained by simply reducing the diameter of the trumpet at the card. He was answered by a man that has two cards equipped with smaller diameter card trumpets who explained that the smaller trumpets wear out quicker.

This same mill is equipped with the spring device on the calender rolls of the cards and is having no trouble. About 20 per cent more stock is placed in the card cans and there is no trouble at the drawing frames, as experienced by Mr. Bolt.

Still another member reported seeing results of a test made on cards before and after equipping them with the spring device and the use of the spring device increased the breaking strength of the yarn 10 pounds. He then explained how it would be possible to get a lower breaking strength with the spring device by saying that if the rolls on drawing and slubbers are set close before the spring device is put on, after installing the spring device it would be necessary to open the rolls slightly, say 1/16-inch wider than usual on rolls covered with cork, or the fibers will be broken. This mill also gets 40 per cent more stock in the card cans.

The chairman then suggested that the mills should conduct some research and tests on this subject to get the matter straightened out.

H. H. Willis, dean of the Clemson textile school, then told of having some cards in the textile building that had been run for 15 years under a relative humidity of 60 per cent and the clothing still is in good condition. He brought this point in conjunction with

Reported by John C. Fonville

placing more stock in the card cans, saying that the higher the humidity the greater amount of stock that can be placed in the cans.

The members wished to continue the discussion concerning the spring device on card calender rolls and called on Frank D. Lockman of Monarch Mills, Lockhart. He said that about four months ago he saw in a mill that they were running sliver into the card cans that looked as if they were making roving on the cards. The host showed him the springs on the calender rolls of the cards and Mr. Lockman secured some for his plant. They were tried and he discovered that it made the number about 1½ numbers lighter, so he knew he was stretching the stock, though he was getting 40 per cent more stock in the card can. He then requested the manufacturer of the device in question to supply him with a spring that had only 75 per cent of the strength of the original spring; this was tried and he only got 30 per cent more stock in the card cans, and the roving was still being stretched.

In attempting to prevent the stretching of the stock, he went over the rolls on the coiler at the card and had them all turned down about .8 per cent, since some of the rolls had been grooved and this made all of the rolls uniform. He now has 153 cards equipped with the spring device on the calender rolls and his mill is getting better work and an increased breaking strength by using the device—but the spring he uses is much weaker than the first spring the manufacturer sent him. He added as an afterthought that it might be a good idea for other mills to turn their coiler rolls down anyway.

Spring on Front Drawing Rolls

The third question asked for experience with the spring on front drawing rolls that acts as a cushion for the weight, and again Mr. Lockman was called on. He has tried them but could not say whether he secured a great deal of good from them—he explained that the spring is between the weight and the hanger on the frames, and is used to keep the roller in a more uniform condition.

When Walter Danhoff of Chiquola Mfg. Company, Honea Path, was called on his experience was similar to Mr. Lockman's in that he could not tell whether the rolls are wearing more or less. His rolls are equipped with cork cots.

Sloughed-Off Roving

Some discussion centered around the causes of roving tangling at the top and throwing out one or more layers of roving, described by the chairman as "sloughed-off roving". Several reasons were called out from the floor, those given being as follows: worn or loose builder, worn dog, jumping bobbin gear, improper taper at the start of the roving bobbin, cone reducing wrong from beginning to end, loose gear throwing out on change of traverse and improper taper.

The Textile Exposition will be held March 31-April 5, 1941. It promises to be one of the largest and most interesting expositions yet held, according to current reports. The temporary annex has been enlarged and to date only a few sections in the balcony are not taken.

Yards of Yarn on Bobbin

Another prepared question asked for yardage on warp bobbins using 30s warp yarn. The following answers were given: 30s warp (light side), No. 1 flange ring, 8½-inch bobbin, 1 13/16-inch ring, 3,600 yards on bobbin.

1¾-inch ring, 3,850 yards on bobbin.

1 13/16-inch ring from 3,600 yards to 3,900 yards, and on 1⅞-inch ring from 3,900 to 4,350 yards.

The chairman, Mr. Morton, said that on an 8½-inch bobbin, 1 13/16-inch ring, making 31s, he gets 4,700 yards on the bobbin by test. The natural question was "how?" and he explained that he uses a heavier traveler and changed the stroke to what it should be without causing sloughing-off. His frames ran 6¼ hours on the doff but now are running 7 hours and 10 minutes. He hopes to get them up to 7 hours and 15 minutes per doff. He uses the combination wind, a No. 1 flange ring and the 8½-inch bobbin, setting the stroke on the first traverse for 5 inches. His frames are equipped with a production roll, Saco-Lowell frames, using 19-tooth lay gear and a 2-0 traveler. Answering a question from the floor he said that he has no trouble with tailings. He further said that the relative humidity is 54-55 per cent, which is somewhat lower than he ran on the conventional draft system.

The same question applied to yardage on 40s filling using a 1⅝-inch ring and a 8-inch bobbin. Mr. Morton said that he is not doing so well on the filling because he has old rings and he cannot use the traveler that he should to draw it down. On 40s and 42s he gets 2,300 yards on the quill.

Mr. Splawn gets 2,300 yards also, but said that it "varies", adding that "in fact the variation is what gives me the trouble. The only way to control it is to test it daily." John F. Lockman, Lockhart Plant, gets 2,500 yards on an 8-inch quill and then asked if the mills are troubled more by the cloth room on Monday and Tuesday than other days, to which the chairman said that he thought that the average mill has more trouble on these days because of sloughed-off filling being more predominant early in the week after the week-end stop-off. He put the question to the group and most of them signified similar experience.

Mechanical Cleaners in Spinning

On a show of hands several mills use mechanical overhead cleaners, and one man said that his carder contended that all the trouble in the spinning room from slub yarn is caused by the cleaners. Mr. Lockman couldn't agree with this statement and told the member to look in the box of doffed roving in the card room (before it comes to the spinning room) and he would see that the overhead cleaners are not the cause. Still another mill man said that he has seen on occasion the overhead cleaners blow a layer of roving off the bobbin, and he was immediately reminded that a lot of other things could cause the same trouble, and a review took place on question No. 4 which had already been discussed.

Changing Travelers

The last question on the prepared list concerned the changing of travelers on 30s warp and 40s filling. John Lockman said that he changes his every four weeks and another member running 30s warp changes them every 120 operating hours.

In line with this question a gentleman reported that he has made a number of ends-down tests and has found that if the travelers are changed every three weeks (on 2-shift basis) that there will be no flying-off, adding that the travelers should be changed on both warp and filling regularly regardless of the type of ring in use.

Further information on changing travelers given: (1) change every 250 hours on warp. (2) Mill runs 85 hours per week and change every 4 weeks, No. 1 flange, 9,300 r.p.m.

Mr. Stutts asked how often travelers are changed on 30s spun rayon and he was answered that "I could not get the rayon traveler to run more than four days."

Discussion then took place on the use of the traveler cleaner and only two men set the cleaners with a gauge, but it was agreed by several present that if the frames were not equipped with traveler cleaners, they would go to the expense of putting them on. W. W. Cobb, Norris Cotton Mills, Cateechee, S. C., insisted that they could not get along without the traveler cleaner—it takes much work off the spinner.

Hodges Speaks on Training Men at Spray STA Meeting

THE FALL MEETING of the Northern North Carolina-Virginia division of the Southern Textile Association held at the Central Y. M. C. A., Spray, N. C., on Saturday, October 5, was largely attended by textile operating executives from this section of the textile South. T. C. Pegram, of the Erwin Cotton Mills, Cooleemee, N. C., and vice chairman of the division, presided. J. O. Thomas, of Marshall Field & Company and secretary of the division, gave a brief word of welcome. Chairman Pegram introduced Luther H. Hodges, general manager of the manufacturing division of Marshall Field & Company, who gave a thought provoking address on the subject, "Training for Textiles".

"You, by your presence here this morning and your interest in this type of work and this type of meeting, give testimony to your own interest in bettering yourselves and improving your companies' strength and bettering the industry generally," Mr. Hodges began. "I think that a group like this, if they approach their problems in the right way and really consecrate themselves to the job, can turn an industry practically upside down."

"I do not mean," he said, "that you should turn things upside down as a boy turns his wagon over, but to take time and to regenerate or turn the industry upside down by constantly following the same ideal of improving it to such an extent that it becomes a new industry by your interest in it."

The speaker said that his statement might sound to some like an unsound idea, but that he had seen in a single community, in a single organization, in a single church, one or more individuals who had consecrated themselves to a new order of things with an entirely new conception of things to do and that this attitude had completely changed the aspect of that organization, community or church.

Mr. Hodges stated that in the beginning of his talk he wanted to get into the mind of his audience a different conception of training for textiles from that ordinarily held. What do we mean when we say "Training for textiles?" What is the background for textile training?

The speaker mentioned two major phases. One phase he chose to call technical training for textiles. The other phase he designated as liberal training for textiles, and he stated that both are absolutely necessary. He commented only briefly on the aspect of technical training, because, he thought, it is the easiest thing to do and to get. Anybody with ordinary application can get that training.

"I do not mean," said Mr. Hodges, "to imply that all foremen or all superintendents are equal in their technical ability to handle the job, nor do I mean that all loom fixers are equally efficient, or that all weavers can get the same production. You will find differences in technical aptitude in different people. Generally speaking, technical training is the easiest thing. Back 20 years ago it was not so easy to get."

He called attention to the fact that 20 years ago an ordinary textile college graduate had very little chance to make good and many of them failed. This was due, he said, to two

Mr. Hodges

things—the mill and the man himself. The mill management failed to see the limitations of the old system of training. They failed to recognize that through our taxpayers and through our industry we had set up institutions for technical training, such as textile schools, so that certain persons might there acquire the technical knowledge which later they might apply in a practical manner. The mills then gave no encouragement to these young men. Today the attitude of the mill has changed.

In the old days the man himself was also to blame. He came out of a textile college with the idea that he should be made a manager right away. He, too, did not recognize the limitations of his training. He blamed all his difficulties on the dumbness of his superiors. The textile college graduate's mind has changed. He realizes today when he leaves college and enters industry that he is just beginning another course.

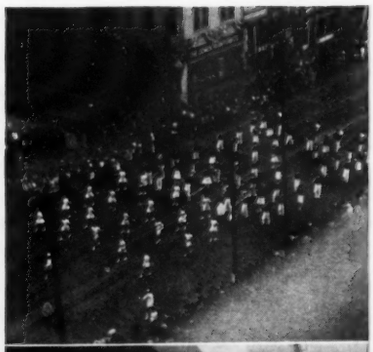
Mr. Hodges next mentioned the so-called vocational classes with which he has been connected in his own community for more than 20 years. He also called attention to correspondence courses and other forms of training. All of these, he felt, contribute a great deal toward technical education or training.

From the thought of technical training he turned to what he chose to call liberal training. He quoted from a recent issue of the *Journal of Commerce* a striking editorial statement in which it was said that business now, in the new defense program, with more and more thousands of workers being added to the payrolls, is finding it almost impossible to locate trained leadership to handle workers. Big business said: "We cannot afford to take for leadership in the future technical men from the ranks, men who know how to run their machines, because these men do not have enough of the liberal attitude toward how to handle people in new conditions and we are likely to find ourselves in the grasp of the law, of the National Labor Relations Board or some other governmental agency, because the type of leadership that is available for industry in America today is not the kind that will protect us.

"That is a challenge," he said, "and is a terrific indictment. It is not entirely an indictment of you and me. The difficulty is due partly to our system which has changed so rapidly that we are finding it difficult to keep up with it. I leave the challenge with you. Business says to America that the type of worker from whose ranks we would promote someone to be foreman or superintendent is such that we could not trust such workers to the care of our interests because they do not have the type of liberal understanding, and of learning about something other than the machine, that will enable them to protect our interests."

Mr. Hodges said that he had favored for some time putting in post-graduate courses in labor relations, accounting, advertising and other similar subjects in order that textile college graduates may have an opportunity, after studying about machines and the like, to get some of the more liberal training. He felt that we should and must get more practically progressive along these and similar lines. He mentioned the field of packaging goods attractively for the consumer, but felt that our schools are giving little attention to

Greenville, S. C. "Takes off Hat" to King Cotton in Gala Celebration



● Greenville (S.C.) literally "went to town" for King Cotton in a 4-day celebration October 3-6 for the second annual National Cotton Festival. Opening with fanfare and pageantry of a huge parade, the event included a stage entertainment, dancing with music by Ben Bernie and the lads, football, dog and pony show and boat races. Hollywood was represented by Ann Rutherford. Textile Hall was fittingly the scene of activities, and various textile companies erected booths with product displays. The Cotton-Textile Institute booth showed the many uses of cotton and displayed samples of fabrics with modern chemical finishes to improve appearance and wear. C. K. Everett of the Institute was present. Participants in shows and dancing wore cotton garments. Photos: above, Edward Denny conducting coronation of King (Luther Marchant, nephew of the late T. M. Marchant of Victor-Monaghan Co.,) and Dot Beattie, queen of the ball. Miss Beattie is daughter of Wm. H. Beattie of Woodside Cotton Mills. Right upper, one of many bands that marched in parade; center, Sunny McManaway and Virginia Potter, junior king and queen; lower, a group of young misses in cotton frocks. Photos, Ken Miles and John C. Fonville of "Cotton".

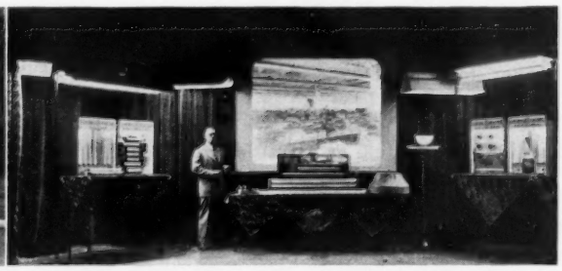
such important phases of business.

The speaker told of the progress made in vocational training in his own coumunity over a period of more than two decades. Each year over this period, he said, there have been from 10 to 20 large classes in a variety of industrial subjects. Several years ago a textile training school was established in his community to give more highly developed training than was possible in the evening school classes. He also mentioned his own firm's training program which takes in men from the top executive positions down through the different grades of supervision. He felt that many industries will eventually have full-time training men on the job, giving all their time and attention to this important phase of industrial life.

He saw a vision of the textile industry in the future with classes in psychology, with courses in salesmanship, with research laboratories, and with a more progressive approach to all its problems.

Following Mr. Hodges' address, A. H. Hinshaw, of the Revolution Cotton Mills, Greensboro, N. C., was elected to the divisional executive committee to succeed J. D. Scott.

E. M. Holt, manager of the Erwin Cotton Mills Company, Cooleemee, N. C., led an interesting discussion on "Good Mill Housekeeping, Quality and Safety." A great deal of interesting discussion centered around the first question: "What system do you use for placing picker laps, roving cans, filling boxes, warps, trucks, etc., in order to conserve space, keep the alleys clear, and keep the mill clean and orderly?" Various methods were suggested and many of those attending enother questions pertaining to good textile mill housekeeping.



● The van-load of newly created "stage properties" and a troupe of General Electric lighting educators that took the road during October on a tour that literally will wheel Nela Park to the nation. The Atlantic Coast will be covered first, with later crisscrosses from border to border. The tour, which will require a full year, will take in 12,000 miles. In the pictures, left, the van and some of the GE faculty members; right, one of the displays that will be viewed by industrialists all over the country.

Factoring Plays an Important Part in Industrial Defense

National Preparedness means increased production to meet growing demands for all types of manufactured goods.

The Assignment of Claims Act of 1940 permits the assignment of contracts with the Government to banks and trust companies or other financial institutions in order to obtain the money with which to proceed with the contracts, whether or not any of the work has been performed under the contract.

Southern manufacturers handicapped by insufficient working capital, for either Government orders or regular volume, may find our Factoring service to be the answer to their financial problems.

For Complete Information Write Now To

FACTORING DIVISION
TRUST COMPANY OF GEORGIA
ATLANTA, GEORGIA

AGGREGATE RESOURCES OVER SIXTY MILLION DOLLARS

CURRENT TEXTILE TOPICS

National impetus felt by mills

COTTON mills were assured of the last quarter practically at its beginning, with sellers in fact getting cautious about the forward demands of consumers. The price situation, slow to move in the early months of the defense program, also was beginning to give signs of healthy progress toward reasonable levels before the middle of October. All of which reflected a national impetus which was spreading in all directions from defense plans.

Indices of industrial activity in general indicated a rate the first part of October unequalled since the year 1929. The National Industrial Conference Board about that time showed the background for broad manufacturing activity. It stated that new orders received by manufacturers rose sharply in August for the fifth consecutive month. Its seasonably adjusted index of orders was up 52 per cent from the year's low recorded in March.

Fall retail trade reports were also encouraging to cotton mill men, along with other interests. One agency which keeps a regular record of luxury buying reported that "rearmament prosperity" has surprised retailers. Such is the effect of defense plans that some economists have been saying that the business boom of 1929, which some experts of that time said might not recur for 50 years, is likely to seem as nothing more than half speed by comparison.

Keeping watch on speculation

Such a situation naturally bears watching, for avoidance of a runaway market, and cotton mill men have been careful to keep away from over-speculative tendencies. Up to the middle of October it was figured that 80 per cent of the backlogs in unfilled orders were for delivery only up to the end of this year. That was both due to precaution against undue speculation and a price situation in flux.

It will be recalled that a year ago the trade was much concerned over the outlook. September had brought boom-like conditions, created by experience in the World War. Sellers were hoping for a long term of steady prices on a profitable basis. But it was not to be. The World War precedent was a false guide. The spurt proved to be a boomerang, with another of the recessions which for years the cotton industry has been deprecating.

This fall a sounder movement seems to be under way. The rise of prices has been perhaps disappointing in the beginning, but October found the trend still upward and business moving along better than that of last year after the concentrated surge induced by war. The war last year gave a false impulse to trading and the movement petered out. Nothing like that can be expected under the national conditions existing today.

Conditions point to stable prices

One of the conditions which has indicated a long period of good business and a favorable price trend has been the comprehensive nature of demand for cotton goods. Printcloths have had a big volume, then industrial fabrics, then the fine goods. Heavy cloths for defense and other commercial purposes have been fairly constantly a market factor and this circumstance naturally has redounded to the benefit of other lines, since users of the latter have been constrained to look to their needs.

Mills continued in October to be reluctant toward acceptance of business into the coming year, yet buyers were finding it difficult to get some of the goods wanted in the final quarter of 1940. Defense needs in such an item as cotton ducks, for example, left buyers for other uses out in the cold. Backlogs in several important divisions, as a matter of fact, had become heavier than those a year previous before the end of September and the unfilled orders assured production well into next year.

On the matter of prices, meantime, the defense program in its larger aspect has become a factor in cotton manufacture. While up to this month it had not started serious speculative buying and consequent effect upon prices, the need for skilled workers in shipyards and other war industries was an inducement for mill operatives to shift. Thus some mills have resorted to premium wages for their best help and this must be reckoned in the costs of production.

It appears that various leaders of the cotton industry, especially Russell T. Fisher in his capacity as president of the National Association of Cotton Manufacturers, brought information to bear upon the excess profits tax bill which caused an important change regarding corporations that had not made money during the base period for figuring the levy. The bill as originally proposed would have placed an intolerable burden upon mills.

Mr. Fisher brought before the Ways and Means Committee a sample mill case to show that the original basis for figuring a normal income was inequitable and that, in the interests of continuing the units of the industry in operation, a more adequate provision should be made. The presentation was fully convincing, as attested by the final draft of the act.

Another matter gaining attention in October was the looking over of mill equipment by defense committees, to see what goods could be produced most easily. It was said that reasons were being sought for lack of bids on requests for goods. One explanation offered is that managements have hesitated to bid when they knew other mills were more experienced on the particular production involved.

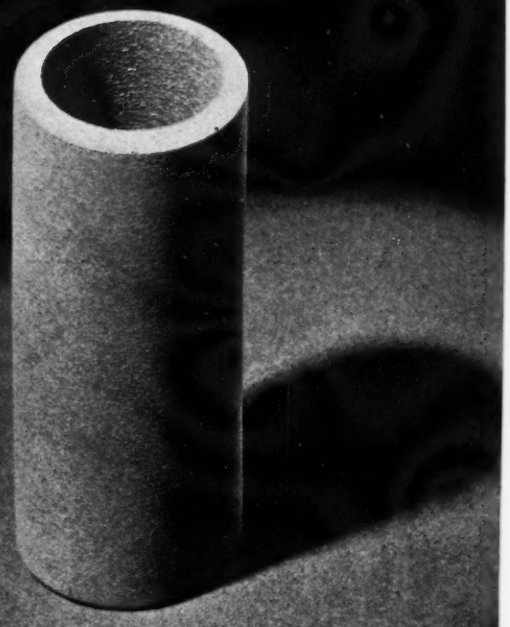
One thing, as previously cited, is that managements have hoped to avoid reorganization, through distribution of government business in special fabrics over a long enough period for the mills specializing thereon to handle the business. The industry is giving priority, however, to defense orders. It is suggested, in this connection, that educational orders could be tried to qualify mills for production if and when government demand should become more urgent.

New England Mill Situation

OCTOBER appeared to be a turning point for the cotton mills of New England. At the meeting of the National Association of Cotton Manufacturers on Oct. 9 and 10, a review of recent conditions by the president, Russell T. Fisher, indicated that the manufacturing margin on staple cotton goods was generally unsatisfactory, with the government business only of slight benefit to the northern mills.

Simultaneously the market was showing a change in the situation for fine cotton goods, which makes for a rather mixed report of conditions, withal encouraging for the future. To take the association phase first, Mr. Fisher noted the spurt of last fall and the decline from November to the low

How 8,500,000 *spindles are spinning*
BETTER YARN AT LOWER COST



WITH more than 8,500,000 active spindles now running on Armstrong's Seamless Cork Cots, the acceptance of CORK as the number one roll covering is self-evident.

BETTER YARN—Nature has endowed CORK with five properties that cause it to spin *better, more uniform yarn*. These are:

1. *High Frictional Coefficiency*. Produces uniform drafting with minimum slippage. Drafts out bulky roving. Eliminates eyebrowing.
2. *Resilience*. Provides added safety margin in spinning. Enables cork to "come back" after being grooved by top roll laps and hard ends.
3. *Resistance to Lateral Flow*. Helps maintain a truer drafting surface.
4. *Resistance to Penetration by Liquids*. Prevents shrinking or stretching during humidity changes. Resists damage from oil or dye absorption. Guards against "sweating" of rolls in hot, humid weather.
5. *Extraordinary Durability*. Endows cork cots with the capacity for retaining their natural advantages throughout long periods of service.

LOWER COST—The initial cost of Armstrong's Cork Cots is no greater than that of ordinary roll coverings. Your *savings begin* with quicker, cheaper assembly. *They continue in service*, for CORK gives longer wear because it's tougher. Furthermore, after these cots have been running as long as the average full life of ordinary coverings, you can rebuff them—make them like new again—*three or four times!* And the cost of each rebuffing is only about half a cent a roll.

PROOF

Your Armstrong representative is equipped with convincing proof—in new, visual form—of the superiority of Armstrong's Cork Cots. Ask him to show you how you can modernize for National Defense as well as for *profit* by switching to CORK now! Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S *Extra Cushion* **SEAMLESS CORK COTS**

CORK PRODUCTS SINCE 1860

point in June. He cited a slight recovery during the next four months.

In the early stages of war preparation, he stated, demand was concentrated on a few fabrics such as ducks and heavy twills. After that procurement broadened to include a wider range of fabrics and a larger part of the industry began to manufacture for the defense program. The northern mills, equipped primarily to make fine and fancy goods, benefited only to a slight degree.

Prices start rising on broader market

By Oct. 1, however, a strengthening of values began and a secondary wave of higher prices was realized before the middle of the month in fine combed goods. This was a sharper upturn and was felt to be the beginning of a climb to reasonable figures in a sound market. As usual in such conditions, buyers found it advisable to extend their purchasing. And the mills were wary of over-extended buying.

Turnover was about in balance with mill production of fine goods around the middle of October. Only on fancies or special constructions to be made to order were mills generally committing themselves into the new year. While the defense business had run largely to other classes of goods, some combed goods are involved and these have run up in value. Combed twills, for example, had a rise of 7½ cents a yard in a few weeks.

Mills were also confronted with a strong market for combed yarns. Trading early in the fourth quarter was unusually active in such yarns and many mills were unable to offer deliveries before the end of 1940. Prices consequently were moving up sharply and further tightening of supplies was in prospect.

Rising tendency since last June

Official statistics on cotton mill activity for the fall are not available at the time of writing, but market reports have indicated a further broadening. As previously noted, the June spurt in sales of cotton goods led to an upturn of mill operations in July and this was increased through August, in spite of summer dullness in market activity.

Production of New England mills in August still lagged 25 per cent below the peak rate of last November. The amount of raw cotton consumed, however, was 73,140 bales, or 4.2 per cent larger than the 70,180 bales for July. It was 6.2 per cent under the volume of August, last year. For eight months of the year, consumption was 585,593 bales, against 586,444 for the same time in 1939.

TEXTILE HIGHLIGHTS, by Henry McCarn

HAIDA WARP WEIGHTED LOOM FROM ALASKA WITH CEREMONIAL APRON IN TAPESTRY WEAVE. COTTON WAS USED FOR CEREMONIAL PURPOSES AMONG HOPI INDIANS.
SILK STOCKING 112 YEARS OLD, OWNED BY ROBERT JACKSON, SECRETARY OF GASTONIA SILK HOSIERY MILL, SHOWS WHAT WAS BEING MANUFACTURED MORE THAN A CENTURY AGO.
THE FIRST TEXTILE SCHOOL IN THE UNITED STATES GAVE INSTRUCTION ONLY IN DESIGNING, LOWELL SCHOOL FOR PRACTICAL DESIGN ESTABLISHED IN BOSTON 1872.
NEW TEXTILE BUILDING AT N. C. STATE COLLEGE IN RALEIGH.
HENRY McCARN

Connecticut and Massachusetts, however, had relative gains of 6.9 and 7.9 per cent for 1940 over 1939. New Hampshire, Maine and Rhode Island accounted for the New England loss.

Coming into September, mill inventories of piece goods were only moderate. Unfilled orders represented roughly output for six weeks and prospects for the remainder of the year were considered favorable, with later market reports confirming this view.

Sees no danger of bottlenecks

Speaking at the meeting of cotton mill men in October the president of the National Association of Wool Manufacturers, Arthur Besse, declared that no bottlenecks existed in the textile industry as far as defense production was concerned. He warned that manufacturers should fight to keep government textile contracts on a competitive basis.

Tremendous pressure had been brought in Washington, he said, to place contracts on a basis of negotiation. "There will be still more pressure," he warned. "But, in my opinion, to change to a basis of direct negotiation with mills will be to open wide the door to favoritism and chicanery." He added that there is ample machinery to take care of future defense needs and that, except possibly in wool, there is indication of adequate supplies of raw materials.

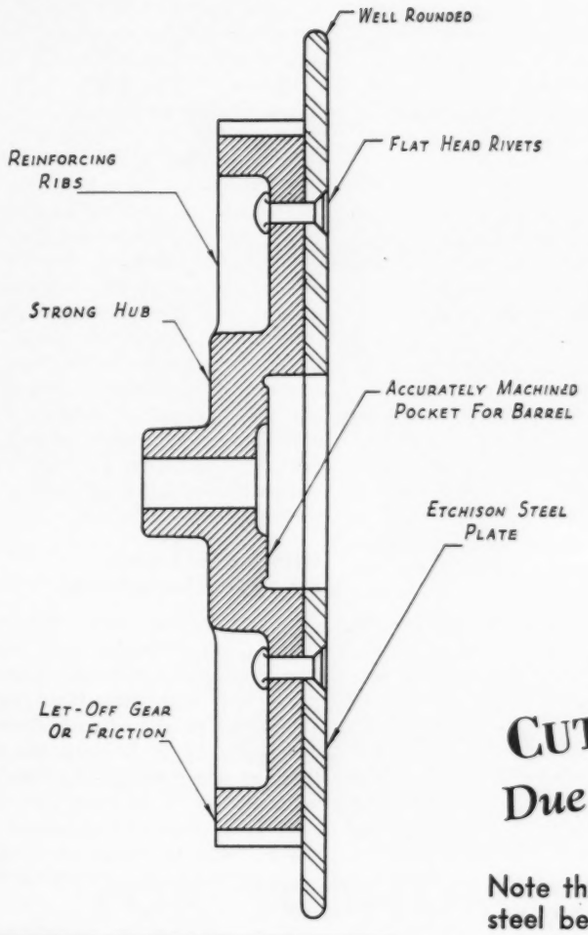
Three-shift issue again in North

Massachusetts, foremost State for many years in restrictive legislation of humanitarian nature affecting labor, has been concerned in recent years over the competitive conditions and easing up somewhat on its program. The issue of three shifts for mills came up again in October. Commissioner of Labor and Industries Moriarty called a meeting for Oct. 18, to resume discussions on this plan.

PROTECT YOUR WARPS

With ETCHISON Patented Steel Beam Heads

(PAT. NO. 1,594,159)



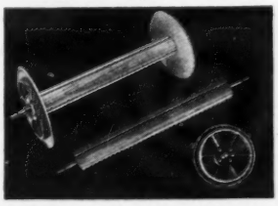
PROVED—
By Performance

CUT DOWN LOSSES
Due to Beam Head Breakage

Note the construction details of an Etchison type steel beam head. A steel plate provided with a cast iron gear or friction let-off replaces the usual cast iron head. The steel plate will not break under the most severe treatment. Both the steel plate and let-off are accurately machined before fastening together with rivets, and the finished head is straight and true. An Etchison steel beam head is practically indestructible. They cost more than a cast iron head, but are worth the difference. They save not only in breakage but also in losses from damaged warps, caused by broken heads. Etchison steel beam heads will help increase efficiency in your weave room.

Also manufacturers of special textile machinery, cloth room machinery and textile repair parts.

Other QUALITY Products



LOOM BEAMS AND BEAM-HEADS . . . West Point loom beams and beam-heads are superior in their operation and economy.

GEARS . . . Gears of all types —noted for their efficiency and durability.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

"THE SITUATION" as seen Across an Executive's Desk

October 17, 1940

THE COTTON textile industry is knowing a boom throughout its entire area, but an especially good boom in certain points. This is due of course to the general upward swing in the business cycle, predicted for some time but now established, and the dominance of National rearmament. It is estimated that each soldier mustered into service uses in cotton goods the equivalent of ½ a bale of cotton. Although figures have not been printed on the possible size of our peace-time army, the inside circles feel that a minimum of 2,000,000 men will be in service by summer which means at least 1,000,000 bales of cotton at the first go-round for army cloths and equipment.

Cotton in the Defense Program

Since May 1st 100,000,000 yards of cotton cloth have been supplied to the army, but even so that represents only 3 per cent, it is understood, of the average cotton textile output. But, it is also recognized that cotton purchases have just begun for army use and that other purchases will swell this total soon to a much larger amount. Throughout the entire market satisfactory activity has been experienced and at this writing at least six or seven weeks of good business have passed.

In both industrial goods and fine goods prices are on the up and figures released by the New York Cotton Exchange show that September cotton consumption was at least 655,000 bales. On Worth Street on several occasions print cloth sales ran to over 10,000,000 yards a day and the prices were very good. Practically all of this stuff was sold for delivery the first quarter of the year.

Defense purchases on twills, drills, and duck absorbed millions of additional yards and it seems, despite some rumors to the contrary, that the industries affected by these purchases will have no trouble whatsoever in making deliveries on time.

The Buyer and the Seller

The seasonally adjusted index of cotton mill activity in the United States was about 138 per cent of estimated normal for the week ending September 21 compared to 133 per cent same period a year ago. The Federal Reserve Board reported the dollar volume of department store sales during September 10 per cent larger than for the same month in 1939.

People who purchase cotton goods seem to have both the money to buy and the willingness to spend this year. This impetus, plus the very good Government purchasing, has brought a state of activity to the textile industry that amounts to a war boom.

However, mill men are valiantly endeavoring to keep their prices within reason despite increased costs of cotton and other factors in order to keep away from any blind charge of profiteering. As a matter of fact, this boom seems to be less of a speculative character than any similar spurt in many years and throughout the industry, even in the low spots, one finds a tone of optimism as far as business is concerned within the immediate future.

Tying in with this we have a strong possibility of reaching the goal of 10,000,000 bales cotton consumption set by the Cotton Textile Institute and the Cotton Consumption Council. It is fortunate that a million odd bales being used by Government needs are on tap for this year, and that the public has a little bit more pocket money to spend. But coupled with those two things the promotion drive being put out by the Cotton-Textile Institute should be very helpful in raising the cotton consumption goal of our nation.

In the meantime, the Government forecasts a crop of 12,000,741 bales for this year which would, even if we came up to the 10,000,000 bale consumption goal, leave us a surplus of 2,000,000 bales. It seems very silly on the face of it to see a surplus staring at us and at the same time hearing mills begging and pleading because of a shortage in certain types of cotton. Somewhere in this AAA program put out by the Government a certain coordination should be aimed at in planting, and despite the curtailed acreage of the cotton farmer certain seed allotments should be mandatory in order to bring the staple lengths in in sufficient baleage to guarantee the mills a year's run on their requirements. For instance, what good does it do the mills using 1 3/16-inch staple to find an estimated harvest of nearly 13,000,000 bales when ginnings up through September 15 amount to only 415 bales of that length, and it is estimated that for Government purchases already contracted for at least 40,000 bales of this staple will be required. This theory is one which could be adopted by some organization as a work project for the next few years, or until a better coordination of planting and manufacturing needs is obtained.

● The pinafore is a newcomer. This one shows a bold plaid in three colors. Woven with a high percentage of crimped acetate rayon with viscose rayon. Courtesy Tennessee Eastman Corp.

Obey the Laws or Sell Elsewhere

In connection with defense purchases, cotton textile mill executives who violate the National Labor Relations Act will find their mills ineligible for participation in Government contracts; at least until the Board's findings are reversed by the courts, holds Robert H. Jackson, attorney general, in a statement addressed to Sidney Hillman, in charge of the labor division of the National Defense Commission.

Mills working on Government purchases are also in all cases where they are selling direct to the Government liable under the Walsh-Healey Act, which if violated carries with it a heavy penalty by fine and the threat of no further Government contracts.

But the textile mills have a friend in court through the appointment of Ray Bell as director of the Textile Advisory Committee of the National Defense, and while of course he has no authority and is in every sense an advisor it is felt that he can best coordinate the needs of the Government to textile mill activity and of course he will carefully watch any developments in conflict with the full meaning of the two above mentioned acts.

Court News of the Industry

One of the specialty fabrics made in this country is airplane cloth, and those few mills equipped to manufacture that fabric—Wellington-Sears Co., Inc., Suncook Mills, Inc., Thurston Cut-

AN ENTIRELY NEW MACHINE . . .

FOR ECONOMICAL PRODUCTION OF HIGH-SPEED LOCK-STITCHING

THE NEW SINGER 400W1, with the exclusive Double Rotary Thread Take-Up, was especially designed for continuous high-speed lock-stitching in light and medium-weight fabrics.

It was skillfully engineered for higher speed, easier operation, freedom from breakdowns, least possible vibration, thread economy, longer life, and firm accurate stitching.

FIVE FEATURES OF THE SINGER 400W1

THE DOUBLE ROTARY THREAD TAKE-UP satisfactorily handles the most delicate thread at high speeds.

ANTI-FRICTION BEARINGS—five ball and five roller bearings mean quicker acceleration, increased production and economy in power.

SINGER ROTARY HOOK is a patented and demonstrated success on high-speed production.

AUTOMATIC HOOK LUBRICATION is provided by a positive oil feed from a central reservoir which also lubricates most of the bearings and moving parts under the bed of the machine.

LUBRICATING FELTS keep needle bar and connecting stud well lubricated at highest speed.

SINGER
SEWING MACHINE COMPANY
MANUFACTURING TRADE DEPARTMENT
149 BROADWAY, NEW YORK, N. Y.
Branches in all principal cities

SINGER SEWING MACHINE CO.
Room 717C2
149 Broadway, New York, N. Y.

Please send complete information about the New Singer 400W1 to:

name_____
street_____
city_____ state_____

Copyright U. S. A. 1940 by the Singer Mfg. Co. All rights reserved for all countries.

● A firm, crush-resistant Teca flannel in a two-tone weave. It is budget-priced and practical; an economical treasure with the college girl. Courtesy Tennessee Eastman Corp.

ting Corp. and Air Associates, Inc., have been named as defendants on a charge of violating the Sherman Anti-Trust law, trying to create and maintain a monopoly in the production of airplane fabric. The defendants entered a plea of not guilty. It is believed that the four mills mentioned could manufacture all the fabric needed by the Government, and it is not believed they would hold it up.

Another case of interest again bobs up. The Supreme Court agreed October 14 to pass on the constitutionality of the Federal Wage-Hour law fixing a minimum wage of 32½-cents an hour for textile workers.

Constitutionality of the Wage-Hour law was challenged by the Opp Cotton Mills, Inc., of Opp, Ala., and other concerns in appealing from a decision by the Federal Circuit Court at New Orleans sustaining the order.

The Circuit Court said it did not pass on validity of the legislation except in so far as it affected the textile wage order.

The Supreme Court agreed last spring to pass on a decision by the federal district court at Savannah dismissing an indictment charging the F. W. Darby Lumber Company of Statesboro, Ga., with violating the statute. The Opp and Darby cases will be argued together.

The Opp petition said the wage order affected more than 1,000 establishments producing more than $1,000,000,000 worth of merchandise and consuming more than 5,000,000 bales of cotton annually.

Legislation of particular interest to the cotton textile industry as well as to all industries was the recently enacted Excess Profits Tax Bill. While everyone has probably had time to apply the Excess Profits Tax Bill to his own problems, the cotton textile industry as a whole is affected in a favorable way through its provision on processing taxes. Any processing tax claims recovered by a mill in any one excess profits taxable year are specifically exempted and not subject to tax.

Also the bill provides that for excess profits tax purposes the refund of processing taxes made to customers during the base period may be added back into income for that period. This increase in base income, of course, increases the excess profits tax credit, and therefore reduces the tax.

The problem in excess profits tax seems to be determining which of the methods a corporation should select. Cotton mills will probably select method 2 (b), whereby they can add 8 per cent on its invested capital before they can be liable for excess profits tax. For instance:

Case No. 1: If a cotton mill is capitalized at $5,000,000 it has an 8 per cent credit cushion of $400,000. Should that mill earn $500,000 in an excess profits taxable year, the normal corporate tax of 24 per cent would apply to that portion and the mill would pay $125,000 normal income tax, leaving $375,000 excess profits taxable, but it receives an 8 per cent credit of $400,000, therefore pays no tax.

Case No. 2: Suppose a mill capitalized at $5,000,000 earned $800,000 in an excess profits taxable year, normal corporate income tax would be $200,000, leaving $600,000 to be taxed. The credit of $400,000 subtracted leaves $200,000 from which $5,000 exemption is allowed with only $195,000 to be taxed.

The tax is figured on the calendar year, if the plant operates on a calendar year basis; or on a fiscal year, if the plant operates that way. In the latter case the excess profits taxable year begins with the first fiscal year after Dec. 31, 1939. If a plant's fiscal year is July-July, then it first pays excess profits the year July 1, 1940, to July 1, 1941.

What the Southern Mills Are Doing

The following information on mill installations is furnished by J. E. Sirrine & Company, consulting and designing engineers of Greenville, S. C.

Piping contract for new boiler installation at Anniston (Ala.) Manufacturing Company to Crawford & Slaten Company of Atlanta. The job covers Babcock and Wilcox boiler with Detroit stoker and Cochrane feed water heater. Boiler plant extension at Erwin Cotton Mills Company, Durham, N. C., for coal handling equipment and silo to Fairfield Engineering Company; automatic coal scales to Richardson Scale Company; ash handling equipment to United Conveyor Corporation; automatic combustion control and plant meters to Bailey Meter Company.

Exposition Cotton Mills, Atlanta, Ga., will re-open the Mill No. 2 at LaFayette, Ga., with A. E. Massey as superintendent.

It is understood that Jefferson (Ga.) Mills No. 3, located at Royston, is considering additions to the mill village.

Maysville (Ky.) Cotton Mills will install Grinnell automatic sprinklers.

Flint Manufacturing Company, Gastonia, N. C., will install 16 spinning frames and additional cards for the Plant No. 2 unit.

Oxford (N.C.) Cotton Mills has a modernization program under way which includes addition to the picker room and opening room, and new carding machinery.

W. R. Armstrong of Gastonia has leased the Rodman-Heath Cotton Mills, Waxhaw, N. C., it is reported, and will manufacture cotton yarns.

Hartwell Mills No. 2, Toccoa, Ga., are building an addition to the opener room and warehouse with J. E. Sirrine and Company as engineers. Estimated cost of $15,000.

Sanford (N.C.) Cotton Mills have resumed operations.

Dunn Woolen Company, Martinsburg, W. Va., is planning to build a one-story addition at a cost of $25,000, with equipment.

Celanese Corporation of America, Inc., is planning a 3-story addition to the plant at Amcelle, near Cumberland, Md. Cost with equipment will be approximately $200,000.

Profile Cotton Mills, Jacksonville, Ala., closed for several months, have resumed operations.

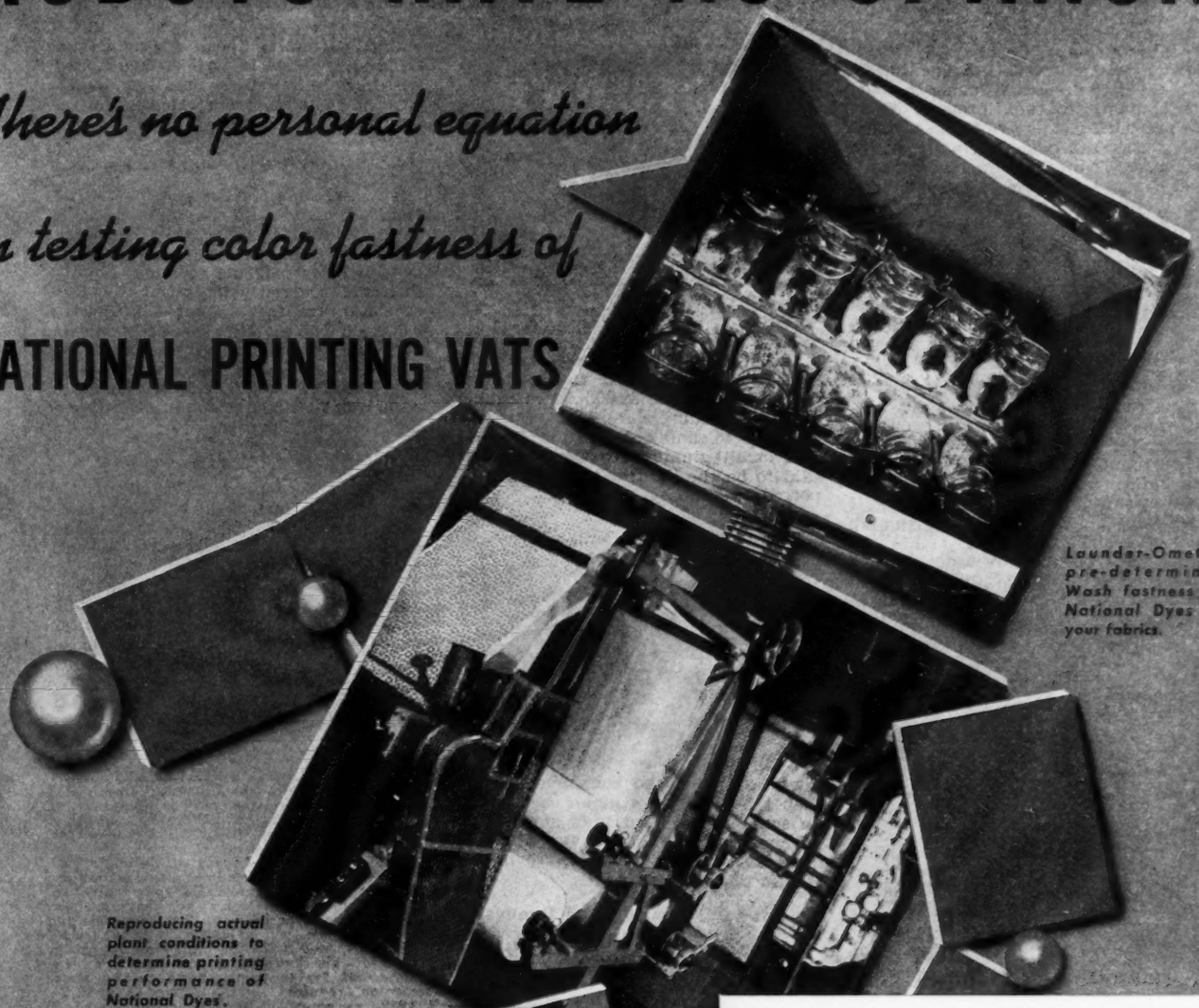
Aponaug Manufacturing Company, West Point, Miss., is operating to fill a contract for British blankets.

Avondale Mills, Sylacauga, Ala., are building an addition to the yarn packing department which will be completed shortly.

ROBOTS HAVE NO OPINIONS

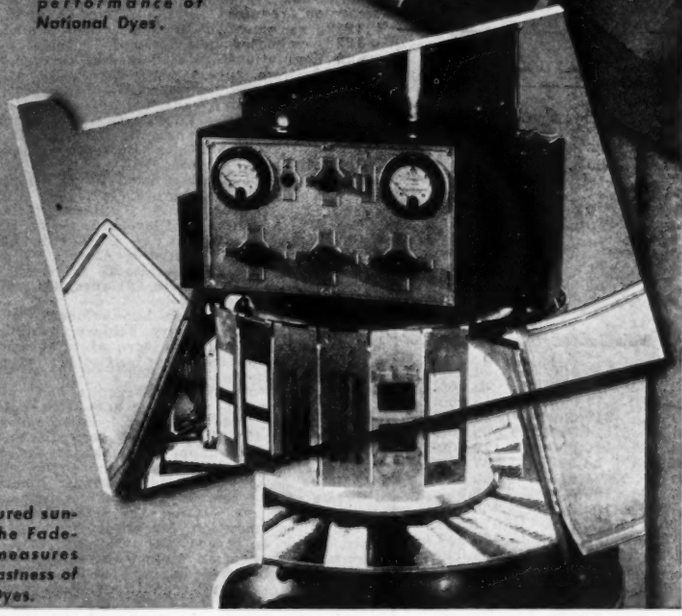
There's no personal equation in testing color fastness of

NATIONAL PRINTING VATS



Launder-Ometer pre-determines Wash fastness of National Dyes in your fabrics.

Reproducing actual plant conditions to determine printing performance of National Dyes.



Manufactured sunlight of the Fade-Ometer measures the light fastness of National Dyes.

A standard printing machine makes test runs to duplicate your "sample to match". A Fade-Ometer blazes at swatches. Mechanical agitators swirl them in detergent solutions under controlled conditions. All the practical operations of printing, finishing, storage and even mistreatment by the consumer are magnified in the National Textile Service Laboratory to determine "to the hour" the fastness of National Vats.

National Printing Vats disperse instantly, give you clean, sharp colors in every fine line and stipple of the printing roll . . . flat, level surfaces in the mass areas . . . with fastness that meets or surpasses all accepted color-fast standards.

We invite you to use National Technical Service.

NATIONAL ANILINE & CHEMICAL COMPANY, INC.

40 RECTOR STREET **NEW YORK, N. Y.**

BOSTON	150 Causeway St.	SAN FRANCISCO	517 Howard St.	NEW ORLEANS	Masonic Temple Bldg.
PROVIDENCE	15 Westminster St.	CHARLOTTE	201-203 W. First St.	CHATTANOOGA	James Bldg.
CHICAGO	357 W. Erie St.	GREENSBORO	Jefferson Standard Bldg.	PORTLAND, ORE.	730 West Burnside
PHILADELPHIA	200-204 S. Front St.	ATLANTA	140 Peachtree St.	TORONTO	137-145 Wellington St., W.

BRANCHES AND DISTRIBUTORS THROUGHOUT THE WORLD

COMMENT on the COTTON MARKET

New Orleans, October 15, 1940

THERE was not much momentum in the cotton market during the past month, owing to the European blockade preventing exports of consequence, which was reflected in small foreign purchases. Nevertheless, there was a good demand from American spinners, due to the activity of domestic mills, and as the movement to market was light, contract values did better than to hold their own, now being more in line with spots and the loan level, although distant deliveries remain at a discount.

Little Change in Indicated Crop

The Crop Reporting Board, Washington, reduced its estimate of the cotton crop 31,000 bales, the yield, as of October 1st, pointing to 12,741,000 bales of 500 pounds gross weight. This forecast indicates approximately 12,350,000 running bales, counting round as half bales. Last year's crop in running bales was 11,481,000 bales.

Crop prospects improved during September by 128,000 bales in the Southeastern States from North Carolina to Florida where below average rainfall and clear, sunshiny days were favorable for maturing and picking the crop. In Alabama, Mississippi and Louisiana, the dry period extended over a longer period of time, caused considerable shedding and reduced prospects by 171,000 bales. In Arkansas, dry weather during the first three weeks of September hastened maturity, bolls opened rapidly and prospects were increased by 56,000 bales. Ideal weather in Oklahoma during September brought about an increase there; while in Texas prospects declined 89,000 bales due to below average precipitation in the Northwest, which caused excessive shedding of forms and small bolls.

Light Ginnings to October 1

The Census Bureau reported only 3,924,000 bales ginned to October 1, compared with 6,682,000 bales ginned to corresponding date last year, and 6,577,000 to same date year before last. The small ginnings to October 1 are said to be the lightest to said date reported by the Census Bureau in many a year.

The smallness of the ginnings so far this season are probably due largely to the lateness of the crop, the lack of incentive to hasten picking, such as a good price and a market to absorb free offerings; the safety outlet being the flow to government loan stocks, without which prices would likely sink to a level below the cost of production.

The Demand for Spots

Spot sales have increased of late, thus adding to the volume of hedges. Reports are current of an easier basis in some sections but it is not general. Shippers are said to be short and spinners are reported paying a premium to get cotton in some states.

Cotton Goods in Good Request

The demand for cotton goods has been well maintained with prices firm and sales running ahead of production. Mills are said to be well booked ahead with orders and there has been much government buying for defense and relief.

Domestic Consumption

The President of the Cotton Textile Institute expressed the opinion, in a public address recently, that the possibility of a domestic consumption of 10,000,000 bales must be considered within reach. Current expectations for this season range from about 8,000,000 to 8,500,000 bales. Last season domestic consumption of lint cotton was 7,746,000 bales and in season before last it was 6,858,000 bales. It is gratifying to see United States consumption increasing so rapidly.

The East Indian Crop

Volkart Bros. estimate the India crop at 6,300,000 bales of 400 pounds each versus 6,159,000 last year, and estimate the carry-over at 1,400,000 bales against 1,062,000 last season.

The New York Cotton Exchange Service, which has compiled its compilation of world statistics on production, consumption, supply and carry-over of all kinds of cotton, issues the accompanying summary of its findings, presented on this page with the monthly census report.

PRODUCTION, SUPPLY, CONSUMPTION AND CARRY-OVER OF ALL KINDS OF COTTON PAST TWO SEASONS. (000) OMITTED FROM FIGURES

	Carry-Over	Production	Supply	Consumption	Destroyed	Carry-Over
AMERICAN COTTON						
1938-39	13,787	11,655	25,452	11,049	66	14,137
1939-40	14,137	11,447	25,584	12,580	85	12,649
FOREIGN GROWN COTTON						
1938-39	8,927	15,742	24,669	17,237	0	7,432
1939-40	7,432	15,736	23,168	15,495	0	7,672
ALL KINDS OF COTTON						
1938-39	22,714	27,407	50,121	28,486	66	21,569
1939-40	21,569	27,183	48,752	28,345	85	20,322

CENSUS REPORT

United States—Bales—	This Season	Last Season
Consumption of lint in cotton growing states, Sept.	550,000	534,000
Consumption of lint in New England states, Sept.	72,000	72,000
Consumption of lint in All Other states, Sept.	17,000	18,000
Consumption of lint in United States, Sept.	639,000	624,000
Consumption of lint in Cotton Growing States, 2 months	1,114,000	1,068,000
Consumption of lint in New England States, 2 months	146,000	150,000
Consumption of lint in All Other States, 2 months	34,000	37,000
Consumption of lint in United States, 2 months	1,294,000	1,255,000
Mill Stocks, Sept. 30	789,000	868,000
Stocks in public storage and at warehouses, Sept. 30	10,734,000	14,206,000
Stocks in mills, public storage and at warehouses Sept. 30.	11,523,000	15,074,000
Stocks in mills, public storage and at warehouses Aug. 31	9,858,000	12,482,000
Active Spindles during September	22,278,000	22,231,000
Active Spindles during August	22,078,000	22,010,000

AMERICAN COTTON—CONSOLIDATED MOVEMENT

August 1 to October 11—Bales	This Season	Last Season
Receipts at United States ports	1,103,000	2,157,000
Exports to Great Britain	146,000	418,000
Exports to France	... ...	134,000
Exports to Continent	33,000	454,000
Exports to Central and South America	5,000	8,000
Exports to Orient	14,000	123,000
Total Exports from the United States	198,000	1,137,000
Stock in New Orleans, October 11	558,000	608,000
Stock at all United States ports, Oct. 11	2,919,000	2,822,000

PUBLISHER'S STATEMENT

of the ownership, management, circulation, etc., required by the act of Congress of March 3, 1933, of COTTON, published monthly at Dalton, Ga., for October 1st, 1940.

State of Georgia, County of Fulton.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared John C. Cook who, having been duly sworn according to law, deposes and says that he is the Business Manager of COTTON, and that the following is to the best of his knowledge and belief, a true statement for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the act of March 3, 1933, embodied in Section 411, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, W. R. C. Smith Publishing Co., Atlanta, Ga.; Editor, R. W. Philip, Atlanta, Ga.; Business Manager, John C. Cook, Atlanta, Ga.

2. That the owners are: W. R. C. Smith Publishing Co., Atlanta, Ga.; W. R. C. Smith, Atlanta, Ga.; W. J. Rooke, Atlanta, Ga.; W. S. Cushion, Cleveland, Ohio; O. A. Sharpless, Atlanta, Ga.; J. C. Martin, Atlanta, Ga.; T. W. McAllister, Atlanta, Ga.; E. W. O'Brien, Atlanta, Ga.; J. C. Cook, Atlanta, Ga.; R. P. Smith, Atlanta, Ga., E. L. Philpot, Atlanta, Ga.

3. That the known bondholders, mortgagees and other security holders, owning or holding 1 per cent or more of total amount of bonds, mortgages, or any other security holders are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and security holders if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholders or security holders appear upon the books of the company as trustees or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stock holders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bonafide owner and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds or other securities than as so stated by him.

JOHN C. COOK, Bus. Mgr.

Sworn to and subscribed before me this 17th day of September, 1939.

E. L. PHILPOT, Notary Public.

My commission expires February 7, 1943.

The Vitritex Finish on Pawtucket Rings is an exclusive Saco-Lowell development. Its hardness and glass-like smoothness is almost impervious to wear. Pawtucket Rings are designed for heavy duty, high speed performance — demand little attention and require no "breaking-in" period.

A trial installation, even on one frame, will show you why Pawtucket Rings give your travelers a "turn for the better".

PAWTUCKET SPINNING RING CO.

(Subsidiary of Saco-Lowell Shops)

CENTRAL FALLS, RHODE ISLAND

Vitritex finish

CUT OUT AND KEEP THIS INFORMATION FOR PERMANENT REFERENCE

This is number 4 of a series. Here you will find practical information of interest to users of rings

In preparing this table of Spinning Traveler Speeds the conditions such as would exist in the average well-managed mill have been assumed. Under some circumstances the speeds listed can be exceeded without creating any unfavorable conditions.

SPINNING TRAVELER SPEEDS

In feet per minute for the various spindle speeds and ring sizes

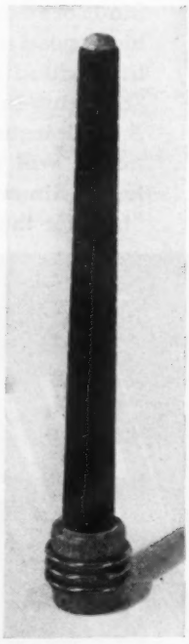
Size of Ring, Inches	Cir. in Inches	Cir. in Feet	Spindle Speed In Revolutions Per Minute												
			6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000
			Traveler Speed In Feet Per Minute												
1¼	3.9270	.3272	x	x	x	x	2617	2781	2944	3108	3272	3435	3599	3762	3926
1⅜	4.3197	.3599	x	x	x	x	2879	3059	3239	3419	3599	3779	3958	4139	4318
1½	4.7124	.3927	x	x	x	x	3141	3338	3534	3730	3927	4123	4319	4516	4712
1⅝	5.1051	.4254	x	x	x	3190	3403	3615	3828	4041	4254	4466	4679	4892	5104
1¾	5.4978	.4582	x	x	x	3436	3665	3894	4123	4352	4582	4811	5040	5269	5498
1 15/16	5.6941	.4745	x	x	x	3559	3796	4033	4270	4507	4745	4982	5219	5456	5694
1⅞	5.8905	.4908	x	x	x	3681	3926	4172	4417	4662	4908	5153	5399	5644	5889
1 15/16	6.0868	.5072	x	x	x	3804	4057	4311	4564	4818	5072	5325	5579	5832	6086
2	6.2832	.5236	x	x	3665	3927	4189	4450	4712	4974	5236	5497	5759	6021	x

Size of Ring, Inches	Cir. in Inches	Cir. in Feet	Spindle Speed In Revolutions Per Minute												
			6000	6500	7000	7500	8000	8500	9000	9500	10000	10500	11000	11500	12000
			Traveler Speed In Feet Per Minute												
2 1/16	6.4795	.5399	x	3509	3779	4049	4319	4589	4859	5129	5399	5668	x	x	x
2⅛	6.6759	.5563	x	3615	3894	4172	4450	4728	5006	5284	5563	5841	x	x	x
2 3/16	6.8722	.5727	x	3722	4008	4295	4581	4868	5154	5441	5727	x	x	x	x
2¼	7.0686	.5890	x	3829	4123	4418	4712	5006	5301	5595	x	x	x	x	x
2⅜	7.4613	.6218	3730	4041	4352	4663	4974	5285	5596	x	x	x	x	x	x
2½	7.8540	.6545	3927	4254	4581	4908	5236	5563	x	x	x	x	x	x	x
2⅝	8.2467	.6872	4123	4467	4810	5154	5497	5841	x	x	x	x	x	x	x
2¾	8.6350	.7196	4317	4677	5037	5397	5757	x	x	x	x	x	x	x	x
2⅞	9.0321	.7526	4515	4891	5268	5644	6020	x	x	x	x	x	x	x	x
3	9.4248	.7854	4712	5105	5497	5891	x	x	x	x	x	x	x	x	x

NEW EQUIPMENT and MATERIALS

Renewable Paper Tube for Wooden Bobbins

According to the American Paper Tube Company, Woonsocket, R. I., mills have purchased wooden bobbins with blank barrels turned to a size that will permit an impregnated, hardened and corrugated tapered paper tube to be placed over it and glued in place. It is said that in this manner the bobbins have resistance to chipping, splintering and roughing up, and a degree of moisture resistance. When the paper tubes are damaged or worn out after service, they can be cut off and replaced economically, and the wooden part of the bobbin used again.



◆

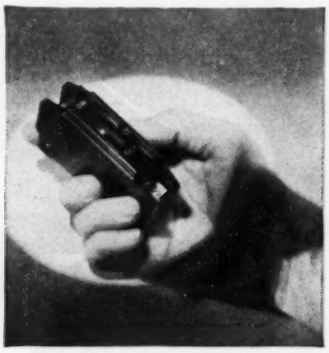
Hydroelectric Lift Truck

Lift Trucks, Inc., 2425 Spring Grove Avenue, Cincinnati, Ohio, has announced a new *hydrolectric* motorized lift truck. The capacity loads are said to be easily lifted by a hand-operated lever through a powerful hydraulic ram. Loads up to 6,000 pounds are moved and controlled by the touch of a finger switch. Motor drive is through the rear load wheel. The chassis weighs only 900 pounds, and the total weight is said to be less than most trucks. It was designed by W. R. Stuebing.

◆

Quicklag Breaker Combines Thermal and Magnetic Action

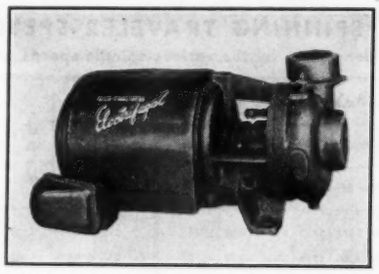
Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has attained what is said to be new perfection in circuit protection by a new small circuit breaker, designed primarily for the protection of lighting, appliance and motor circuits. The new breaker, termed "Quicklag", combines in a single unit a cooperative magnetic and thermal trip. It is available in ratings of 15 to 35 amperes, single pole only, 250 volts ac. and 125 volts dc. The combination of the bi-metal thermal and the magnetic trip actions gives the new device the advantage of instantaneous trip on short circuits combined with the advantage of time-delay for momentary overloads. Its size is said to be smaller per watts capacity than that of any similar circuit breaker and there are no live parts exposed to accidental contact. Calibration is permanent and is sealed against tampering. Automatic operation is indicated by the handle position, which has a central tripped position.



◆

Electrifugal Pump

Allis-Chalmers Mfg. Company, Milwaukee, Wis., has made available its new "electrifugal" pump which is an all-in-one centrifugal pump especially designed as a complete pump and motor unit on one shaft and one housing. The unit has a special motor with a one-piece cast iron motor yoke and pump bracket. The feet are cast integral with the housing and bracket and extend under the entire unit instead of under the motor only. Available in sizes from one hp. to 10 hp. at 3500 r.p.m. and from ¾ hp. to 7½ hp. inclusive at 1750 r.p.m. for heads up to 160 feet.



Fluorescent Lighting Developments

The Miller Company, Meriden, Conn., has announced the Ivanhoe "masterlite" for general and localized industrial illumination, a unit which conforms to RLM standards specifications for 48-inch twin 40-watt lamps; and the Miller "50 foot candler", the first 50 foot candle RLM continuous fluorescent lighting for general illumination. The latter is available in either single or double length wiring channels for two or three 40-watt lamps.

◆

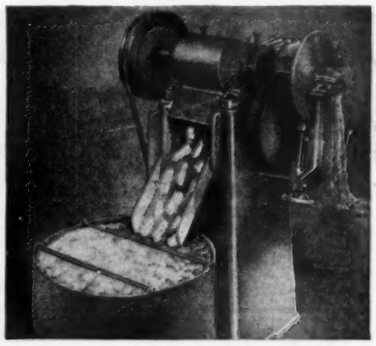
New Type Switch

Robert Hetherington, Sharon Hill, Pa., has patents pending on a new type switch known as "the clicker". Technically it is known as a limit switch in that it limits the movement of an electrically operated machine. It was originally designed for aircraft but has proven itself equally adaptable for industrial uses, it is said. The switch weighs 5/8-ounce and takes a ¾-hp. motor. It is rated at 110 volts, 6 amperes inductive load ac. It has 7/32-inch travel and the same amount of overtravel—of the double break type.

◆

New Rotary Fiber Cutters

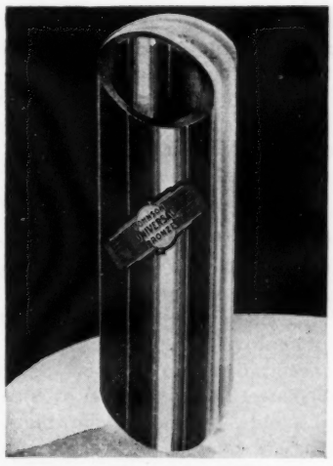
H. W. Butterworth & Sons Company, Philadelphia, Pa., has announced a new Stokes-Butterworth universal rotary fiber cutter that is said to achieve record poundage cutting fiber materials into uniform lengths for mixed spinning, flock and special processes. The new machine is achieving speeds of 750 to 1,000 pounds per hour cutting rayon 1½-inch lengths. Any length of cut from 1/32-inch to 8-inches can be made on the new machine, with the length of cuts being held accurately. Adjustments for length of cut are made by handwheel. It is made for cutting rayon, silk, cotton, wool, flax, jute and other fiber materials. Equipped with ball bearings throughout, it is designed so that the knives can be easily and accurately adjusted after resharpening.



When you buy
BEARING BRONZE

LOOK *at the* ALLOY

JOHNSON
UNIVERSAL BRONZE BARS
Cast in S. A. E. 64



Write for a copy of this handy stock list—giving sizes, weights, etc. It's Free!

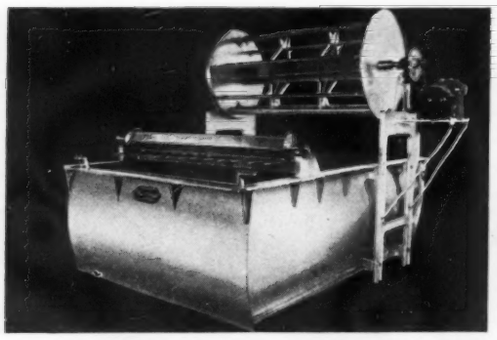
● There is but one way to check the quality of bearing bronze *before* you install it . . . LOOK at the ALLOY. When it is cast in S.A.E. 64 — Copper 80%; Tin 10%; Lead 10% — you have the best general purpose bronze available.

Regardless of how you check Johnson UNIVERSAL Bronze . . . by alloy . . . by performance . . . or bearing life . . . you will find it superior in every way. Add to this the fact that every bar is completely machined — I.D. — O.D. — Ends — and you realize why it is the most economical bronze in the market.

Your local distributor carries a complete stock . . . for immediate service. Over 350 sizes — cored and solid — enables you to buy according to your needs. Try Johnson UNIVERSAL Bronze on your next job.

The most complete SLEEVE BEARING SERVICE in the world

JOHNSON BRONZE COMPANY
Sleeve BEARING HEADQUARTERS
530 SOUTH MILL STREET • NEW CASTLE, PA.



• Said to be the first dye beck with fully curved sides ever built, it is claimed to give added strength and permanence to the tub at less cost. The sides are pre-formed on hydro-dynamic principles for the correct pressure curve when filled with dye liquor, eliminating flexing of sides when tub is being filled or emptied. Note absence of heavy bracing. Manufactured by Rodney Hunt Machine Co., Orange, Mass.

Half-Ton Lift Truck

Barrett-Cravens Company, 3250 W. 30th St., Chicago, Ill., has placed on sale a new ball bearing lift truck capable of handling loads up to 1,000 pounds that can be used with or without skids; this is made possible by a sheet metal deck on the upper frame. New truck is made in platform heights of 3¼-inch, 6-, 7-, and 9-inch. Skids, if their use is preferred, can be made for use with this truck from undressed 2x4's of ordinary crating lumber at less than 20 cents each. Available in only 18-inch width and a full 2-inch lift.

◆

New "Formaset" Finishes

Warwick Chemical Company, West Warwick, R. I., is making available a series of synthetic resin finishes for textile uses. The first of these to reach the market is a pre-condensed urea-formaldehyde resin called Formaset No. 8. It is a water clear product which is said to possess remarkable stability in solution and is therefore an effective agent for permanent textile finishing. Other products will soon make their appearance.

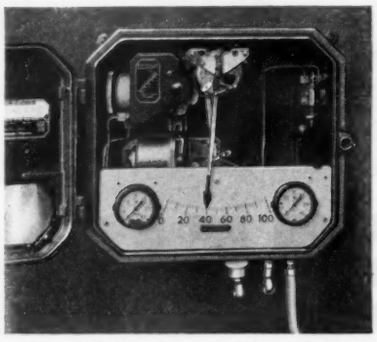
◆

Transmits Written Messages Instantly

TelAutograph Corporation, 16 W. 61st St., New York City, has made available a new telescriber for instantaneously transmitting written messages over wires. The new instrument is capable of transmitting writing, sketches or figures in facsimile to a number of stations simultaneously or to any one or more stations selectively, within one building or between buildings miles apart. The superintendent can sit in his office and direct written messages or sketches to his overseers in their offices. The machine operates on alternating current and can be plugged into convenient power outlets.

Remote Pneumatic Transmission System

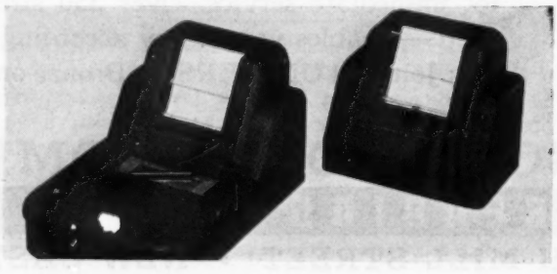
Taylor Instrument Companies, Rochester, N. Y., has developed a remote pneumatic transmission system which is a simple and accurate means of indicating, recording or controlling process variables remote from the point of measurement; it is said to be particularly advantageous where it is desirable to correlate temperature, pressure, flow or liquid level data on a centralized panel or in a control room. It may consist of one or two transmitters connected to a receiver; or one or more receiving instruments as far as 1,000 feet from the transmitter. The new system is said to eliminate the hazards of electrical transmission by doing away with electrical circuits in explosive atmospheres.



◆

"Smoke Screen"

Smoke Screen is a new book by former Congressman Samuel B. Pettengill, in which is revealed what has been happening to America behind the smoke screen of successive "emergencies", and reveals the seriousness of our plight. It goes into discussion of various occurrences in the national government that is leading this country in the same direction as the totalitarian countries. America's Future, Inc., 205 East 42nd St., New York City, price $1.00.



◆

New Rawhide Picker

Danielson Manufacturing Company, Danielson, Conn., has designed a new rawhide picker for multiple box looms. It has more material in the barrel and it is said that the "truss construction" eliminates failure next to the spindle.

The shoulders are built-up from the hides and are not preformed. Proper channels for the picker guides are provided on both sides. The built-up shoulders also provide greater wearing surface on the inside for the picker sticks and retard the sticks from cutting through to the rivets. The newly designed impact head provides a larger shuttle target which permits blunter nosed shuttles.

◆

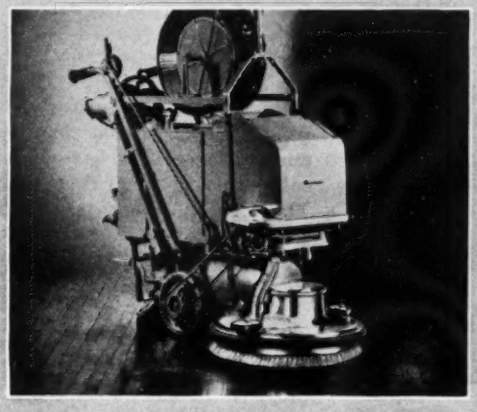
New Line of D-C Motors

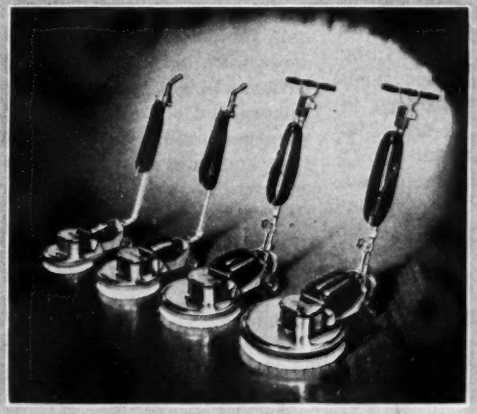
General Electric Company, Schenectady, N. Y., has announced a new line of dc. motors in which compactness and improved protection are two outstanding features. A new design of rolled-steel frame and improvements in end-shield and bearing-bracket construction combine to give the new motors excellent protection from external damage. Open motors are available in constant-speed ratings from ½-hp. at 850 r.p.m. up to and including 60-hp. at 1750 r.p.m.; and in adjustable-speed ratings from ½-hp. at 850/3400 r.p.m. up to and including 15-hp. at 500/1800 r.p.m. New V-type double brushholders give better commutation and permit rotation in either direction and a new type lifting lug facilitates handling.

AN

INDIVIDUALIZED

FLOOR MAINTENANCE SERVICE





☆ **JOB-FITTED EQUIPMENT**

Finnell fits the equipment to your exact needs . . . sees that you get the correct model *and in the size that provides the greatest brush coverage* consistent with the area and arrangement of your floors. 49 different sizes and models in the complete *Finnell* line.

☆ **SPECIFIC CLEANSERS, SEALERS, WAXES, AND ACCESSORIES**

— everything you need — to most economically and best maintain and protect each type of floor in your building.

☆ **A NEARBY FLOOR SPECIALIST**

. . . to give you the closest cooperation possible in the solution of your individual floor-maintenance problems. The *Finnell* man is qualified to give you expert advice on methods and equipment, for back of him is more than a third of a century of specialized experience in treating and maintaining all types of floors.

If you are interested in simplifying floor care and in keeping maintenance costs at *rock bottom* — as of course you are — get the complete *Finnell* story. No obligation. Phone nearest *Finnell* branch, or write Finnell System, Inc., 1311 East Street, Elkhart, Indiana.

FINNELL SYSTEM, Inc.

Pioneers and Specialists in FLOOR MAINTENANCE EQUIPMENT

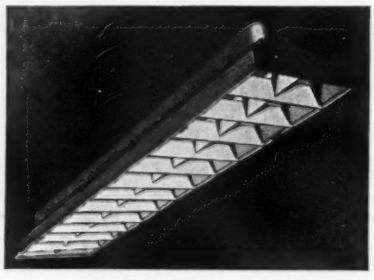
Research Services Available to Textile Industry

Textile Industry Research, Inc., 11 W. 42nd St., New York City, is a company of consulting and developing engineers for the textile industry, recently incorporated. The activity of the company is to specialize in spinning and weaving processing problems, and the details of manufacturing spun rayon (and its blends). Personnel of the company formerly were connected with Gherzi Textile Development Company, Ltd., Zuerich, Switzerland. Experience gathered in the textile industry abroad is placed at the disposal of the industry of this country. Officers of the company are Herbert L. Werner, president; Ernest L. Frankl, vice-president and treasurer; Samuel Pleasants, secretary; and Aldo P. Greco, member of the board.

◆

Lamp-Shielding Louver for Fluorescent Fixture

Benjamin Electric Manufacturing Company, Des Plaines, Ill., has provided a new lamp-shielding louver for fluorescent lamps which is an acces-



sory that may be attached instantly and conveniently to any "stream-liter". It increases the shielding angle to approximately 23 degrees in all directions. The shields hide the lamps when viewed from the side or end of the reflector in all normal angles of vision.

◆

Multi-Speed Across-the-Line Magnetic Starters

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has released a new line of across-the-line magnetic starters for use with multi-speed squirrel cage motors of from 220 to 600 volts, one to 100 hp. These starters are designed to start the motor across-the-line at any speed. Different speeds are obtained by changing the connections to the motor so as to change its number of poles. Starters are available for the following types of multi-speed motors in 2, 3 or 4 speed types: constant horsepower, constant torque, variable torque, single winding motors and double winding motors. Features include push-button speed selection, accurate overload protection, low voltage protection "de-ion" arc quenchers, and front of board wiring with accessible terminals.

◆

Flashlight Extension to See in Out-of-Way Places

Sierra Aircraft Company, Sierra Madre, Calif., has developed a novel flashlight bulb extension for making inspection in difficult-to-get-at places in all types of textile machines. It can be projected through narrow passage ways, around corners or through small holes which will not permit the insertion of an ordinary flashlight. It is made in lengths from 6 inches to 36 inches, the extension having a plug

which will screw into any flashlight with the bulb in the opposite socket.

◆

Sectionalized Motor Control

Cutler-Hammer, Inc., Milwaukee, Wis., has made available Unitrol, a new engineering idea in motor control installation. It is built on the same principle as today's sectional filing cabinets, and permits all needed types of control devices to be organized in locker-like motor control centers instead of the usual "pillar and post" method of mounting. The control center can be quickly built without special engineering.

◆

New Conditioning Fluid

Burkart-Schier Chemical Company, Chattanooga, Tenn., has developed a new conditioning fluid, Tenesol, for cotton textile yarns. It is to be used in dilute solution in water and its rapid wetting action is said to afford a complete moisture regain in a minimum of time, and due to the hygroscopic nature of the product, there is said to be excellent retention of the regain. It may be used in all types of conditioning and twist-setting machines. Yarns conditioned with the fluid show an even penetration and absorption of moisture, with no surface globules or droplets of water. No harmful action is imparted to the yarn, which subsequently is said to weave better. One gallon per hundred gallons of water is recommended by the manufacturer.

◆

Machine for Moving Heavy Machine Tools

The Lewis-Shepard Sales Corporation, 295 Walnut St., Watertown, Mass., has adapted an open end hydraulic lift truck for the problem of moving or relocating extra heavy machine tools. It accomplishes the job with safety and speed. The truck has extra wide spreading arms, and special levers for picking up heavy objects.

◆

Multi-Point Indicator

Republic Flow Meters Company, Chicago, Ill., has placed on the market a new multi-point indicator for indicating drafts, pressures, differentials and other factors in boiler and industrial furnace operation. Zero adjustments and all piping connections for each gauge unit are accessible from the front of the panel and each unit is designed to be withdrawn, like a book from a shelf, without disturbing other units. The gauges have 12-inch vertical, translucent, rear-illuminated scales. The new indicator is supplied with from 2 to 16 of the interchangeable gauge units, and is built for either flush or projected mounting.

◆

Galvanometer by GE

General Electric Company, Schenectady, N. Y., has announced a new galvanometer that is said to be three times as sensitive as previous galvanometers. The new instrument is suitable for many applications where wall types were heretofore necessary; applications include temporary set-ups for factory and laboratory testing, and apparatus production where rapid readings and minimum fatigue to operator is essential.

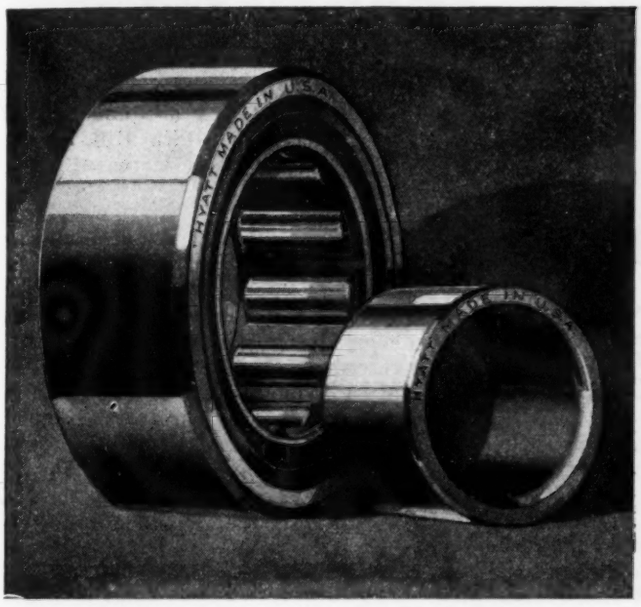
◆

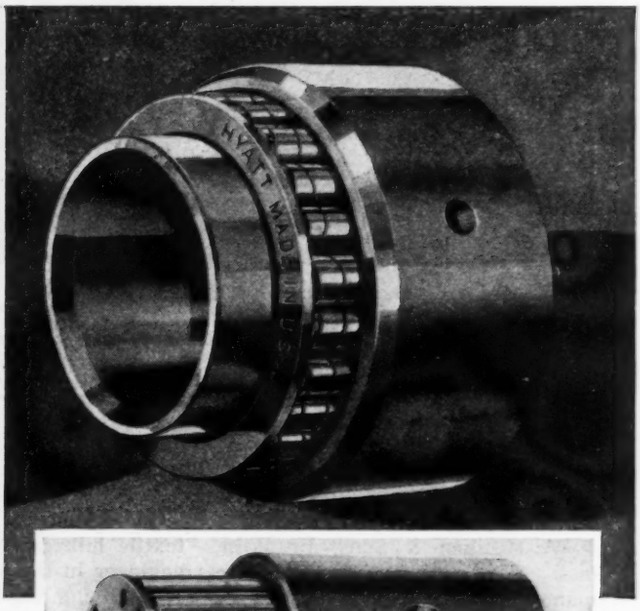
Two New Products

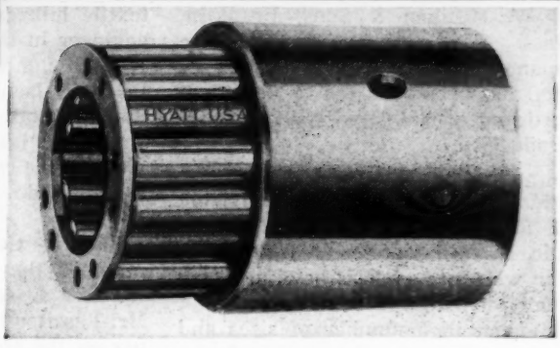
National Oil Products Company, Harrison, N. J., has announced two new products. The first of these is NOPCO 1444 for use in preparing pine oil disinfectants. It is described as a light colored base, and it is said that simple handmixing is all that is required to obtain a disinfectant of high pine oil content.

The other product is a new pigment suspension agent for flat wall paints, trade-named Metasap 571, it is a fine, white powder, a modification of aluminum stearate with a minimum jelling power.

LIGHTENING THE LOAD







●No matter what the application there's a size and type of Hyatt Roller Bearing for the job. Illustrated above left, Hyatt Hy-Load Solid Roller Bearing; above right, Hyatt Wound Roller Type Bearing; opposite, 90,000 Series Solid Roller Bearing.

★

Lengthen the life of your textile machines —equip them with Hyatts!

WITH SMOOTH-ROLLING HYATTS there's no friction to rob mechanical equipment of its ability to function well. Freed from friction, Hyatt-protected machinery takes all loads with a minimum of effort . . . with less wear and attention . . . and lasts longer. Tough jobs come easy wherever Hyatt Roller Bearings are used . . . in mill and factory, on highway, farm, and railway. Let Hyatts lighten the load of all your equipment. Hyatt Bearings Division, General Motors Sales Corporation, Harrison, New Jersey; Chicago, Detroit, Pittsburgh and San Francisco.

HYATT

ROLLER BEARINGS

QUIET

TIMELY NEWS ITEMS with a TEXTILE SLANT

New Southern Headquarters for Crompton & Knowles

● The southern branch of Crompton & Knowles Loom Works has recently occupied its new quarters at 1505 Hutchison Avenue, Charlotte, N. C., removing from its previous Charlotte location which it had occupied for many years. The new quarters, shown above, house the company's southern sales office and repair parts warehouse, where more than 12,000 different loom parts in various quantities are stocked. Frederic W. Howe, Jr., is southern agent of the company . . . . . .

Schmidt Manufacturing Company, 116 Front St., New Bedford, Mass., manufacturer of textile loom equipment, has purchased the concern of L. W. Milliken & Sons, Franklin, Mass. The equipment of Milliken (manufacturer of lug straps, pickers, etc.) has been removed to New Bedford and consolidated with Schmidt production.

Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., has announced that Condor whipcord endless belts are now available from stock for prompt shipment in a number of sizes and in styles capable of handling drives from ¼ hp. to 25 hp.

Curtis Lighting, Inc., 1123 West Jackson Boulevard, has announced the following changes in the organization: M. C. Wilt has been appointed vice-president and general manager and working with him are G. T. Morrow, vice-president in charge of sales; H. J. Dillon, vice-president in charge of production; and L. N. West, secretary-treasurer. Kenneth Curtis continues as chairman of the board and Darwin Curtis as president.

Nova Chemical Corporation, 153 Waverly Place, New York City, has been appointed sole distributor for Nuprint textile colors, a new line of colors for textile printing recently developed by Maas & Waldstein Company, Newark, N. J. The colors can be applied directly to cotton, rayon, acetate and other fabrics by means of standard textile printing machinery and no after-treatment is required, according to the company.

W. A. Isenberg has been appointed textile lubrication and transmission engineer in the southern division of E. F. Houghton & Co., Philadelphia, Pa. Mr. Isenberg will work out of the Charlotte office. Formerly he was in the textile lubrication department of the company's main office in Philadelphia.

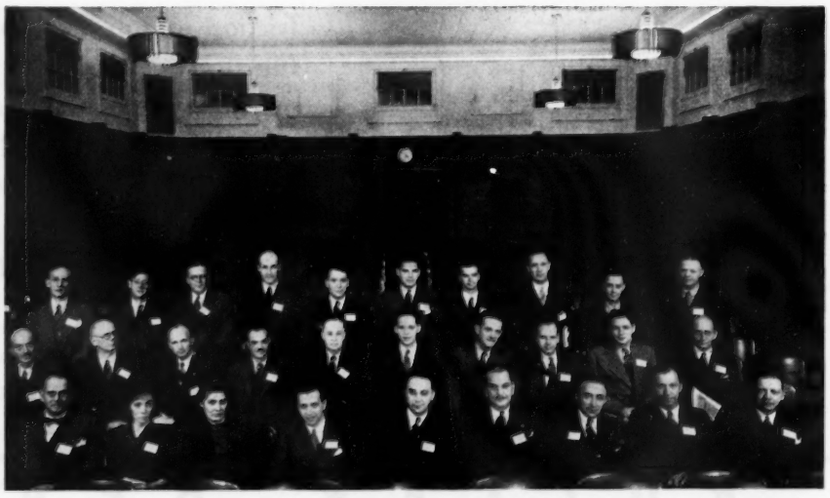
General Coal Company has announced the appointment of J. W. Lassiter as southern sales manager. Mr. Lassiter has been active in calling on the southern textile trade as assistant to the late C. L. Rowe. S. W. Reagan will adjoin Mr. Lassiter as assistant southern manager. This company maintains offices in the Johnson Building, Charlotte, N. C.

William L. Pierce, for the past 20 years connected in an executive capacity with the Bellman Brook Bleachery of Fairview, N. J., and the Newburgh Bleachery, Newburgh, N. Y., has joined the textile division of National Starch Products, Inc.

Warwick Chemical Company has announced that extensive additions and improvements are under construction at the Rock Hill, S. C., plant to cope with increased business.

George H. Bucher, president of the Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., and 15 other employees of the company's Pittsburgh offices received gold emblems in recognition of 30 or more years of service with the company. More than 21,000 other employees of Westinghouse who have been with the company 10 or more years are receiving similar awards this year.

Universal Winding Company, Providence, R. I., has made arrangements whereby the children of the company's English co-workers will be brought to this country and provided with a haven for the duration of the war. Plans have been made by the company workers to take care of the children in homes corresponding to their own, and it is expected that sons of Universal employees will be given the opportunity to train in a plant similar to where their fathers work in Manchester.



● Group of business paper editors attending the lighting conference held at Nela Park, Cleveland, Ohio, September 30, sponsored by the Lamp Department of the General Electric Company. Editors were entertained and heard educational lectures on lighting subjects covering industrial, store, home and school lighting. Interesting feature of conference was visit to laboratory set up for testing and proving lights for night driving safety in automobiles.

Mineral Khaki Shades

for Government Requirements

PRODUCED WITH CYANAMID'S

ACETATE OF CHROME

BLACK IRON LIQUOR

Consult our nearest office for technical service and information.

American Cyanamid & Chemical Corporation

30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

DISTRICT OFFICES: 822 West Morehead St., Charlotte, N. C.; 89 Broad St., Boston, Mass.; 600 S. Delaware Ave., Corner South St., Philadelphia, Pa.; 20 North Wacker Drive, Chicago, Ill.

Employees and officials had fun at the annual barbecue-field day outing staged by the North Georgia Processing Company, Toccoa, Ga., (subsidiary of Clark Thread Company) on October 5. The 600 employees of the company each invited a guest; no cost to anyone, profits from soft drink dispenser in mill paid expenses. Local merchants supplied prizes to winners of events and to holders of lucky gate tickets. Employees requested officials to run race—half of them fell down; Bill Beldon of Clark's Austell, Ga., plant won. Photos, left to right, ladies' 50-yard dash; Lou Ella Thomas and Jim (cook) inspect the barbecue; (right to left) A. W. Babbitt and F. W. Thomas, assistant general manager and general manager respectively of all Clark Thread Company plants, with headquarters in Newark, N. J., who came down for the event, A. J. Morse, manager of Toccoa plant, and two lady employees. Photos, John C. Fonville of "Cotton".

New Textile Publications

National Safety Council, Inc., 20 N. Wacker Drive, Chicago, Ill. "Safety Pays", a brief safety rule book for distribution to operatives. Scale prices on quantity orders.

Standard Pressed Steel Company, Jenkintown, Pa. New bulletin featuring the complete line of Unbrako screws.

The Goetze Gasket & Packing Company, Inc., New Brunswick, N. J. New 64-page handbook and catalog on industrial gaskets. Known as Catalog No. 53, it obsoletes all previous literature of the company.

Republic Flow Meters Company, 2240 Diversey Parkway, Chicago, Ill. Bulletin No. 801 on draft and pressure gauges and recorders.

Koppers Company, Pittsburgh, Pa. Literature on various products made by company. Index to literature available.

Hygrade Sylvania Corporation, Hygrade Lamp Division, Salem, Mass. New catalog on Miralume fluorescent lighting.

General Electric Company, Schenectady, N. Y. New 20-page booklet on "Electronic Devices for Industry", listing some of the more important vacuum-tube apparatus and describes application and method of operation.

Commercial Solvents Corporation, 17 East 42nd St., New York City. Literature presenting facts about Nitroparaffins.

Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J. New drive data book for Condor whipcord endless belts.

Hewitt Rubber Corporation, Buffalo, N. Y. Literature covering twin-weld hose, a patented construction putting both the acetylene and oxygen lines into one easily handled unit; all-synthetic curb pump hose; Monarch belt; and other transmission belt items.

U. S. Department of Commerce, Washington, D. C. "Hosiery Lengths and Sizes" (third edition), commercial standard CS46-40, a recorded voluntary standard of the trade. Order from Superintendent of Documents, Washington, D. C.; price 5 cents.

Research Advisory Service, 51 East 42nd St., New York City. A survey conducted among business leaders to find out what they need most that industrial research might supply.

Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J. Literature descriptive of Calconese Brilliant Orange GF Conc.

Morse Chain Company, Division of Borg-Warner Corporation, Ithaca, N. Y. New 92-page catalog and engineering data book, Bulletin R-40, containing information on construction of channel-lubricated, interchangeable roller chain, etc.

Roller-Smith Company, Bethlehem, Pa. Catalog 3630 on the outdoor oil circuit breakers, Class 50-OC-75.

The Permutit Company, 330 W. 42nd St., New York City. Literature descriptive of the Mag-de-Sil (silica removal) process.

Lowell Textile Institute, Lowell, Mass. Quarterly Bulletin of the school, covering a study of the influence in gilling, of changes in draft and uncontrolled distance, upon the properties of English processed worsted yarns and fabrics made from Noble combed top.

Philadelphia Quartz Company, 121 S. Third St., Philadelphia, Pa. Issue of "Silicate P's & Q's" devoted to a series of studies made on the suspending power of various solutions used in cleaning processes with Ilmenite Black.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. "Small Motor Selector" guide, an illustrated folding sheet containing all essential data needed to fit the right motor type to any job. Request F-8525 from Dept. 7-N-20.

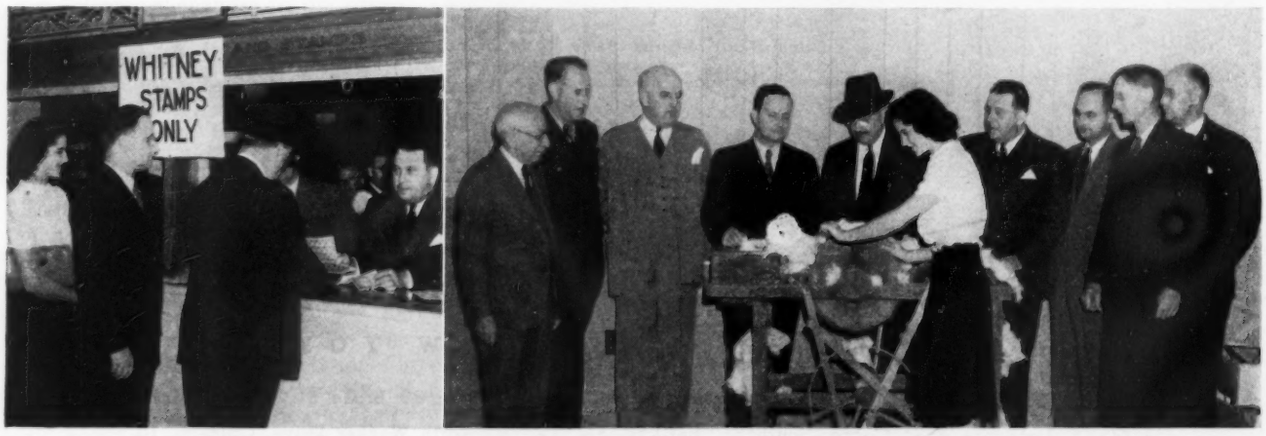
New 24-page booklet describing Type FP capacitor rack and switching equipment for both indoor and outdoor service. Request data 49-200 from Dept. 7-N-20.

64-page "Quick Selector" catalog for all electrical equipment. Request Catalog 30-000 from Dept. 8-N-48.

TelAutograph Corporation, 16 West 61st St., New York City. Brochure describing the new Model G telautograph for transmitting written messages to distant points.

Worthington Pump and Machinery Corporation, Harrison, N. J. Bulletin W-210-B26 on the company's pressure filters for water purification, and Bulletin W-210-B27 on the company's hot process water softener.

Hygrade Sylvania Corporation, Salem, Mass. Interesting booklet on lighting entitled "You Have Lived to See a Miracle in Lighting".



• October 7 was designated as Eli Whitney Day in Savannah, Ga., in memory of the inventor of the cotton gin, in 1793. A bronze tablet commemorating the invention was unveiled at Mulberry Grove Plantation, post-war home of Revolutionary War General Nathaniel Greene, where Eli Whitney made his famous discovery. Whitney stamps were sold in Savannah throughout the day. Photos: left, Oscar Johnston, president of the National Cotton Council, buying the first sheet. Next in line from right to left, Alden H. Whitney, Washington, D. C., a direct descendant of Eli Whitney; Miss Mary Nell Porter, Cotton Queen from Memphis. Right, Miss Mary Nell Porter demonstrating the workings of the original hand model Whitney gin to participants in exercises. Third from left is C. K. Everett of Cotton-Textile Institute.

WE'RE SAVING MORE THAN 50% ON OUR LOOM LEATHER COSTS SINCE WE SWITCHED TO BONDARON

Hundreds of mill operators have found by actual experience that the *most economical* leathers to use are the *finest they can buy*—which, of course, means

ORIGINAL and GENUINE
"The Leather with the Hair on"

Bondaron
REG. U. S. PAT. OFF.
TEXTILE
LEATHERS

Why not try them on your own looms?

SEND FOR BOOKLET 202

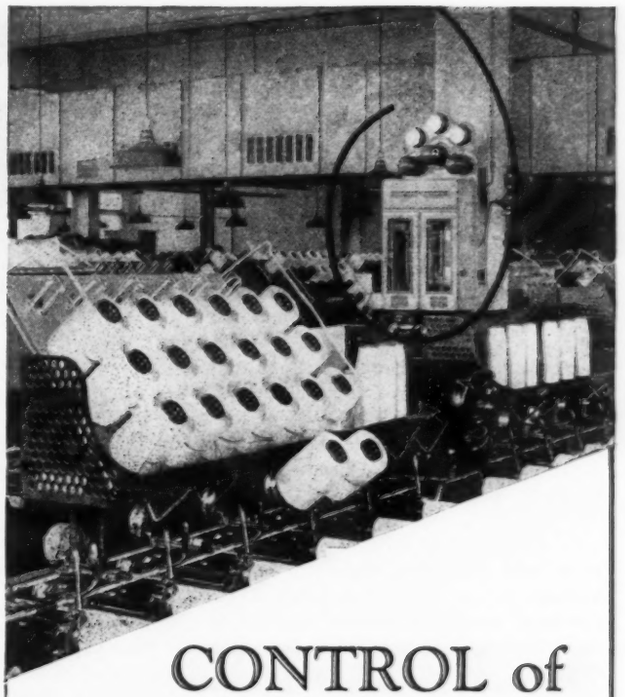
Cotton Loom Picker

Lug Strap

Harness Strap

Check Strap

CHARLES Bond COMPANY
617-623 ARCH STREET PHILADELPHIA, PA.
Manufacturers of Textile Leathers for Nearly Half a Century



CONTROL of
Certified CLIMATE

The sensitive Psychrostat calibrates itself. Self contained thermometers (laboratory type) audit its action for you.

Surprising what a Psychrostat may be hitched up to do. Turns humidifiers on or off. Sprays (in Central Stations) on or off. Fresh air or recirculating dampers on or off.

A two-stage Psychrostat actuates humidifiers sort of double duty; light in winter, heavy in summer. Another stage may regulate temperature—right in the same instrument.

And now a new Psychrostat regulates the speed of Central Station fans. Makes Central Station Air Conditioning less expensive to operate.

In Parks Certified Climate installations you get all the experience that went into the development of this versatile control of Air Conditioning.

Parks-Cramer Company
Certified Climate

Fitchburg, Mass. Boston, Mass. Charlotte, N. C.

PERSONAL NOTES
About Men You Know

IRA S. PITTS, JR., of Westminster, S. C., formerly superintendent of weaving at Southern Brighton Mills, Shannon, Ga., who has been absent from mill duties because of an operation, is filling-in as instructor of weaving and designing at the Clemson (S.C.) College textile school in the position made vacant by the resignation of GORDON B. M. WALKER.

C. D. NALLEY, formerly connected with the weaving department of Springs Cotton Mills, Lancaster, S. C., has been made overseer of weaving at the Whitney (S.C.) Manufacturing Company, succeeding W. H. SPENCER, JR., who as noted is now with the Spartan Mills, Spartanburg, S. C. Mr. Nalley and Mr. Spencer are Clemson College textile graduates.

LEWIS THOMAS, formerly with the Lanett (Ala.) Mill Division of the West Point (Ga.) Manufacturing Company, has accepted the position of instructor and mechanician in the textile school of the Texas Technological College, Lubbock, Tex. He is a graduate of the textile school of the Alabama Polytechnic Institute, Auburn, Ala.

JAMES WALTON, JR., formerly with the Hugh Grey Hosiery Mills, Concord, N. C., has become superintendent of the Gastonia (N.C.) Full-Fashioned Hosiery Company, succeeding WILLIAM M. GROSSE, resigned.

JOHN P. FARIS has become superintendent of the Watts Mills, Laurens, S. C., succeeding H. W. KISER.

FRANK GRAHAM, formerly connected with the Warwick Mills, West Warwick, R. I., has been made superintendent of the Fairfax Mills, Pawtucket, R. I.

DAVID STILES, who has been night superintendent at S. Stroock & Company, Newburgh, N. Y., has been made assistant superintendent at Swift River Woolen Company, Stafford, Conn.

P. A. KAY, formerly overseer of weaving at Easley Mill No. 2, has been made superintendent of the Gossett Mills, Williamston, S. C.

At the Alabama Mills, K. D. FORSYTH has been made superintendent of the Aliceville plant and will continue his duties as superintendent of the Winfield plant also. H. B. PRICE is superintendent of the Dadeville unit, succeeding W. E. WILLIAMS.

T. FRED BELL has resigned as secretary and treasurer of the Victoria Cotton Mills, Rock Hill, S. C., and JOHN RODDEY has been named as his successor.

K. P. LEWIS, president and treasurer of the Erwin Cotton Mills Company, with plants in North Carolina, was recently tendered a testimonial dinner, after having served 40 years with the organization.

J. H. ROBBINS, formerly connected with the Springs Cotton Mills, Chester, S. C., and who a short time ago became associated with the Gaffney (S.C.) Manufacturing Company as overseer of spinning, has been promoted to assistant superintendent of this plant.

Obituary

GEORGE F. EARNSHAW, former president of the Earnshaw Knitting Company, Newton, Mass., passed away recently at Ocean Point, Maine at the age of 70.

STEPHEN H. CROWLEY, assistant general manager of the Lewiston, Me., division of Pepperell Manufacturing Company, passed away September 14 at the age of 58.

CLIFFORD C. VAN BUSKIRK, manager of the New York City bulk sales office of Corn Products Sales Company, passed away October 5.

ANGUS M. LANDER, 77, pioneer textile executive of Pelzer, S. C., passed away during September. At an early age he became associated with CAPTAIN ELLISON A. SMYTH in the organization of the Pelzer Manufacturing Company.

BENJAMIN G. SLAUGHTER, 59, former president of the Tubize Chatillon Corporation, passed away the middle of September as the result of a heart attack.

JOHN COWAN HUGHES, well known in the cotton textile market, passed away at the age of 82 following a heart attack.

Waiting Room Stuff

By Our Telephone Operator

(This department, omitted in the October number, is being continued by [popular?] request!)

•

Dewey Carter [travelers] showed us motion pictures taken in New Orleans while his wife was with him; how about the ones he took on Burgundy Street when she was not along?

•

Dave Friday [Cocker] still runs Eleanor (my, my day) a close second in covering territory—Yankeeville one day Deep South the next.

•

If you have a following in dyestuff end, we know a good salt account that's available.

•

Frank Lockman [Lockhart, S. C.] president of STA and erstwhile clairvoyant of the industry knows things about your own line that you don't. Hush-mouth stuff, too.

•

Must moustaches and goatees be so conspicuous in the dyestuff and chemical business; trademarks, reckon?

•

Ed Kempton [springs and things] at Gastonia has a new one on tap; make him talk.

•

Jim Cook [finishing machinery engineer] of Charlotte looks like a lawyer.

•

Mecklenburg [Hotel] exchange saw sales of train-load of machinery and supplies last month. Bell boys still mopping up.

•

Time for Ike Wynne [winders] to plan that Florida trip.

Odenheimer [treasurer at Lane in N. O.] reports machinery additions. Maybe the boys don't get around often enough.

•

How would you go about telephoning a mill man after midnight?

•

No news from the two boys in Woodside Bldg. at Greenville. Must be busy passing out war orders—ours come from home.

•

Turk Terrell wore his Willkie tie but wouldn't leave the office.

•

Rip Wear tells us he's one starch salesman leading such an exemplary life we can't get anything on him for this column—but the lady typing this for printer calls him Adonis.

•

Jimmy Sorrells [lubricants] doesn't tell about his wreck when ladies are around.

•

Davis Batson [shuttles] begs that it not be announced (yet?).

•

Walter Woodward [shears, folders and such] home with headache during World Series—no radio in his office.

•

Bubber Wilson [loom gadgets] asking about Ted Forbes' [Atlanta] Sea Island secretary.

•

Best wishes for recovery to C. M. Stodghill [size compounds] who recently was in Atlanta's Georgia Baptist Hospital.

•

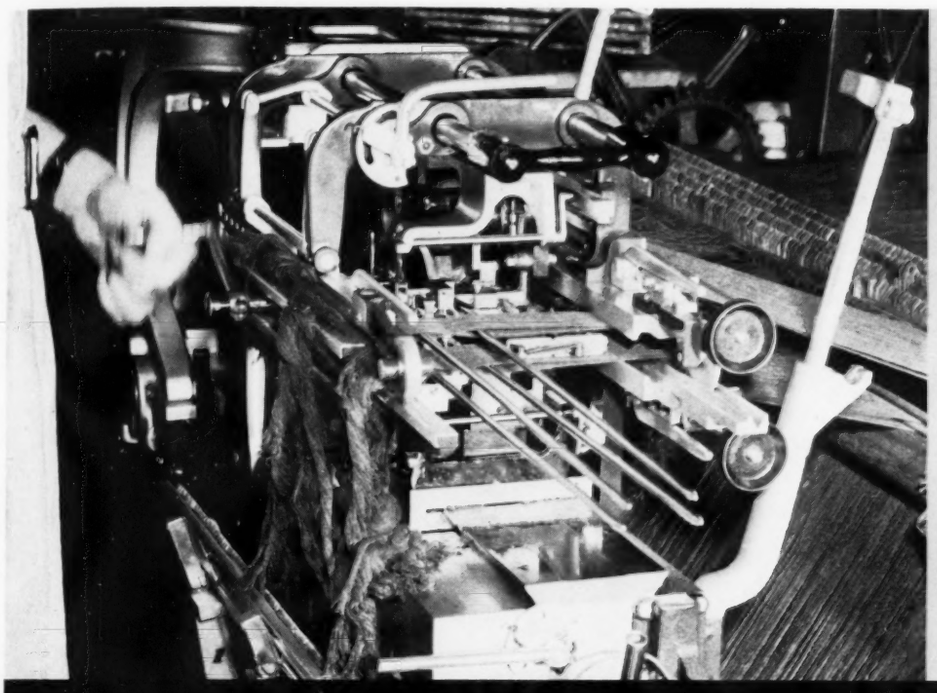
Did Jim McDougall [dyeing machines] get his hoarse voice imitating Scotch bag pipes in wee-sma hours?

•

No such thing as perpetual motion? Watch Harry Matthews' pipe.

•

Mike Chauncey [fluorescent lamps] passed out cigars in Hotel Charlotte—pointed out it was only a sales meeting.



BARBER-COLMAN

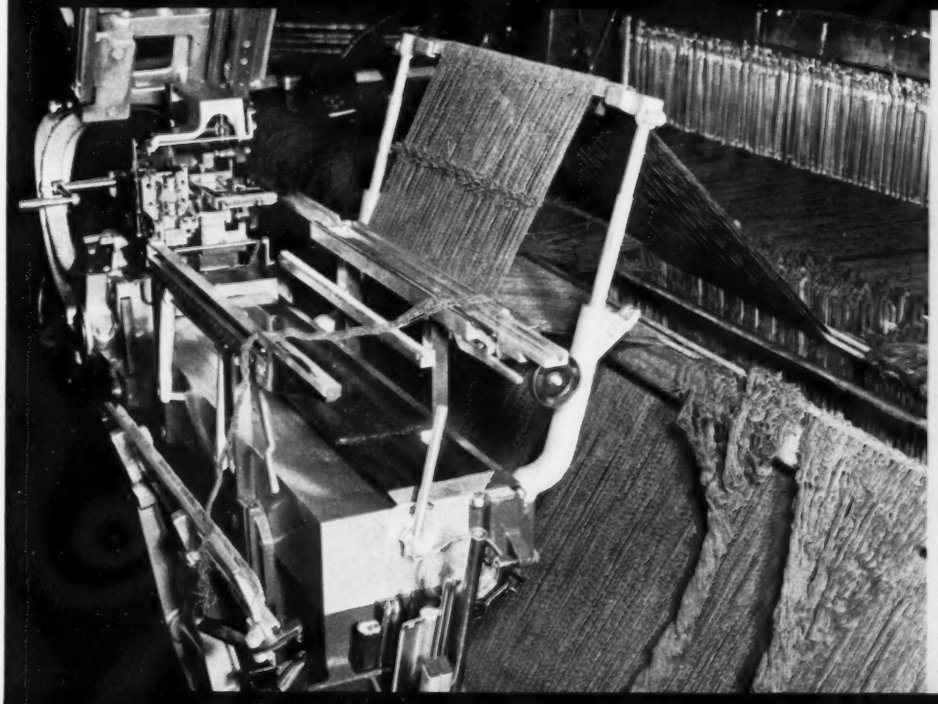
Portable

WARP TYING MACHINE

MODEL "LS"

WOOL WARPS...TIED IN AT THE LOOM

LOW COST WARP REPLENISHMENT - HIGHEST QUALITY RESULTS



The upper picture shows the Model "LS" Warp Tying Machine in action on a "bite", or portion, of a wool warp. In the lower picture, the bite has been completely tied and is about to be cast off. Note the next bites separated, ready to be put in the machine, which is fully portable and operates in the narrow alley directly behind the loom.

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

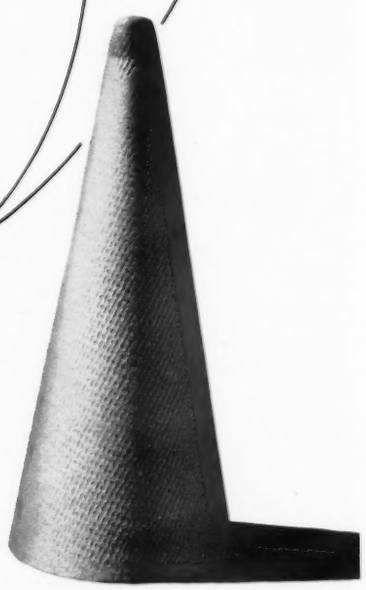
CONTROL POINTS

In the American system of mass production industry has developed methods to insure that products will be uniform.

Here at Sonoco, at vital intervals along the production line—points-of-control are maintained to guarantee absolute and rigid regulation of uniformity and quality in every product.

Raw materials are first subject to careful laboratory checks. At intervals, inspections for flaws and for dimensional accuracy are made. Finally, products are carefully tested under conditions similar to actual use.

This is the system of your dependable source of supply.

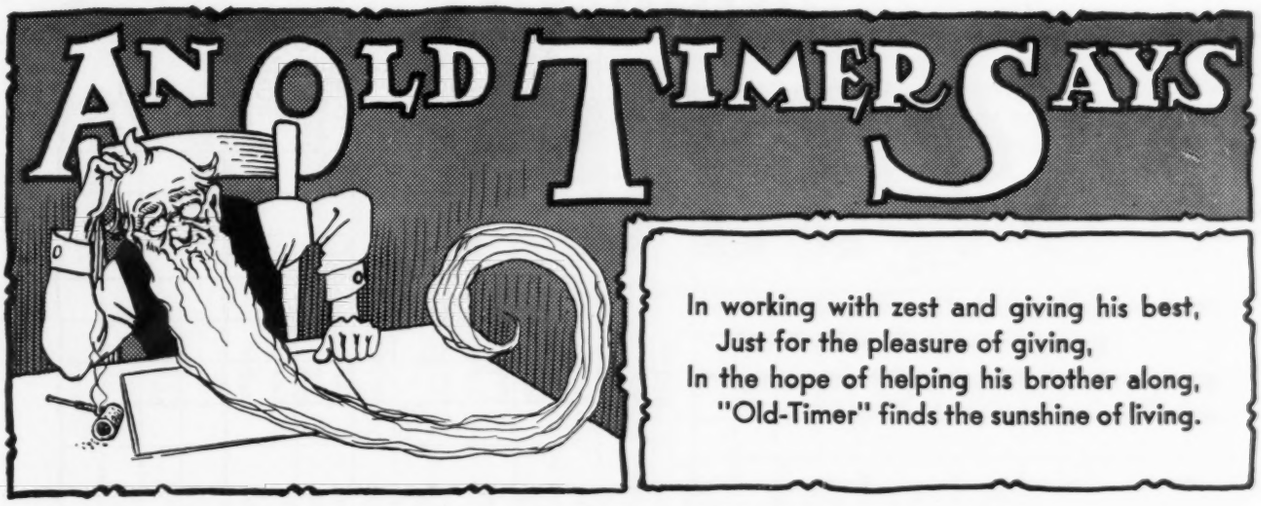


SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. HARTSVILLE S. C. MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

SYSTEM (*Continued—Part 4*)

THIS IS the fourth installment of a discussion by Old-Timer, with his friend, Jim, on the necessity of some sort of system in the purchasing and use of mill supplies and equipment, and accurate records of their life.

It will be helpful to read the three installments that have already appeared: page 67, August issue; page 95, September issue; and page 129, October issue—for the discussion is continuing, and the October installment gives the details of the procedure recommended in the present installment.

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER'S part in the conversation, while those in italics represent JIM'S part.)

Now then, JIM, you see how simply the system may be applied to loom pickers. You cannot, however, use the steel dies to stamp dates on loom pickers, but if you care to go to the trouble or find the information will justify the trouble, you can put dates on pickers with a pen and ink, and, just for your information, this very system of putting the date on loom pickers with ink and also keeping the record to show the average life of loom pickers expressed in loom hours caused us to make arrangements with a picker manufacturer to use belting stock to make our pickers out of, instead of using the scrap leather stock that some loom pickers are made of.

As we built up our record on loom pickers we soon found out that the cheap picker was the most costly in the long run. To prove this to our own satisfaction, we enlisted the services of our weavers in the problem of loom stoppage on account of the failure of any loom supply by placing a card on each loom with the list of supplies on it which caused most loom stoppages, with a blank space opposite each item so that the time the loom stopped for the failure of this item of supply could be filled in by the weaver and the time the loom was started up after the worn-out item of supply had been replaced was filled in by the section man. This system soon taught us that the few cents a good picker cost over the cheap picker was money well spent.

"Economy is the wise expenditure of your firm's money."

Then, to carry the experiment still further, we contracted with a picker manufacturer to use leather belting stock, which we purchased, to make our pickers of. We believe the average mill man, overseer or superintendent or manager, and the purchasing agent, if any, would really be surprised to know how few cents per picker these pickers made of belting stock cost us, over the price of the best regular pickers we could buy. For example, suppose a good picker costs you 12 cents each and the very best picker you can buy costs 15 cents or even 18 cents each, although that is a tremendous increase when expressed in percentage—the idea of paying 50 per cent more for a picker—but the average buyer loses sight of the fact that in the 18-cent picker you still have 12 cents tied up in the cheaper picker and that 6 cents is the figure to take into consideration instead of 18 cents. Had you ever thought about the cost of a supply item that way? Anyway, the final proof of all these questions is found in the cost per loom hour of any item of supply. Matters not what any salesman says—matters not what any overseer or superintendent or section man says—matters not what you believe in your own mind or what some past experience has proven to you beyond any doubt—the system of cost per loom hour is final, regardless.

There are some arrangements of purchasing supplies which this system will not fit in very well with and there are some people who will be very much disappointed, and there are some people who will be very much displeased, but to the man who wants honestly and conscientiously to earn the salary his firm is paying him by the *"wise expenditure of his firm's money"* and to promote his own reputation as an efficient textile manufacturer—well, heck, you answer it.

Loom strapping, such as jack and harness straps, may be easily stamped with the steel dies—date put on, and by bringing the worn out or broken strap to the supply room when getting a new one—the date

taken off, can be entered in the loom strapping record book.

As soon as you determine by the record the average life of the harness and jack straps you are using you can then experiment with some other strap ma-

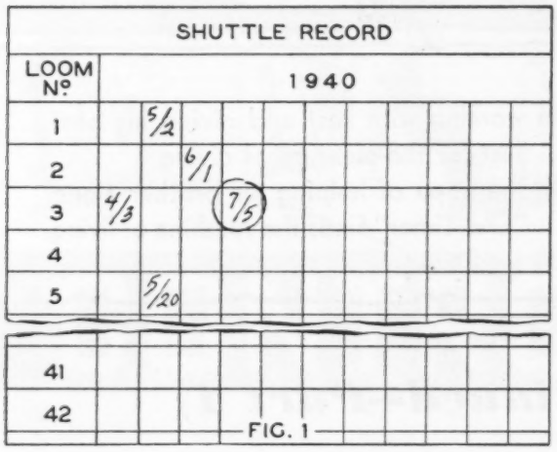


FIG. 1

terial which is less expensive, or more expensive, as your judgment dictates. You understand, of course, that the hours the weave room runs between the date put on and date taken off give you the loom hours which represent the life of the strap.

And we are taking it for granted that all mills have an accurate record of shuttles that each loom wears out or breaks. Broken shuttles may be designated by simply putting a ring around the date as it is recorded in the record. This makes the broken shuttles show up plainly when looking over the record. A shuttle record should be so arranged that several years of shuttles used may be seen at one time. A blank book of most any kind, if large enough, is sufficient for this record. (See Fig. 1.) Simply have the number of your looms beginning at No. 1 loom and running through the total number, at the left-hand side of the page and running vertically to the bottom of the page. This leaves the balance of the two pages on which to insert dates for worn-out or broken shuttles.

An even longer record may be kept, without having to write up a new book by leaving about two lines of space between each loom number, something like the illustration shown in Fig. 2.

So, you see, JIM, as you will not have more than probably three spaces filled in, on any one loom for a year, this shuttle book will last a good many years, and you will build up a very valuable record.

Yeah, OLD-TIMER, *I've been keeping such a record for more than five years, now, and it has been the means of reducing the number of shuttles we use considerably, or, as I see you are about to tell me I should say, the record has been the means of increasing the shuttle hours—*

That's correct, JIM, and—

Before you go any further in explaining this system about supplies—in fact I think you have explained enough or made sufficient illustrations for any mill man who is interested to adopt the idea to his own local conditions—I'd like to ask, especially since you have given this system about buying supplies so much

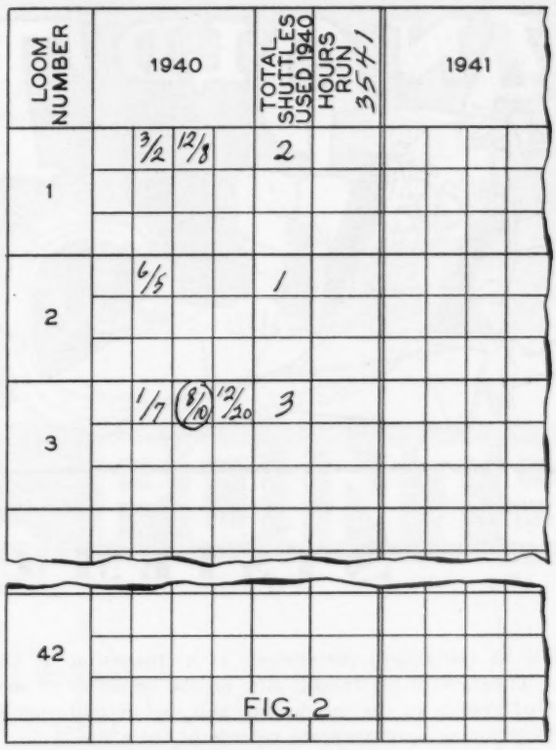


FIG. 2

importance, if you consider this system more important than the system you explained some years ago about an overseer or superintendent keeping a record of his own personal work, or did you call that some kind of system too?

Sure, that is properly referred to as a system, JIM, and, frankly, I consider it far the most important system I ever used in a cotton mill because it will actually make more money for the firm you are working for than the system which we have explained about purchasing and keeping a record of supplies. Because it will increase any overseer's or superintendent's efficiency for keeping up with details; it will improve his memory; it will prevent many things happening to a man's job which he would otherwise let slip up on him; it will prevent any one process from getting into a neglected condition which will show up as an inferior product in the cloth room—

Oh, for goodness sake, OLD-TIMER, *you just don't seem to know how to stop when you get started. Do you say good morning to a man three or four times, or just once, like a sensible man does—*

Well, JIM—

Well, nothing. That personal system was published several years ago, so just answer my question in a reasonable way and stop at that.

O. K., then, I have already answered it, except to give the title, in case any new readers who did not have the opportunity of studying that system when it was published in the magazine, beginning with February 1932 and ending in the June 1934 issue, as a series, under the title "The Story of Old-Timer's Methods of Working and Management". There were 20 articles in the series.

(This discussion of System, by Old-Timer and Jim, will be concluded in the December issue.)

Now

Washable

TECA BLENDS

REG. U. S. PAT. OFF.

the first laundry-approved spun rayon fabrics

Approved as washable by the American Institute of Laundering

All men's and women's garments of the new washable TECA BLENDS, which are made to approved specifications, will be entitled to the official label, guaranteeing acceptance of the garments for laundering by any of the 2,200 leading commercial laundries comprising the Institute membership.

For more information about launderable TECA BLENDS, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York, sales representatives for Tennessee Eastman Corporation, subsidiary of Eastman Kodak Company.

Eastman

CRIMPED ACETATE RAYON

ALL STEEL
ECONOMY BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.
ECONOMY BALER CO., DEPT. C ANN ARBOR, MICH., U.S.A.
REPRESENTATIVES:
New York Office: 100 Gold St.
Philadelphia Office: Drexel Bldg.
Terrell Machine Co., 1200 No. Church St., Charlotte, N. C.
Boston Office: 601 Atlantic Ave.
Economy Baler Co., Box 653, Atlanta, Ga.

This is the Age OF SPEEDS and LONG DRAFT SPINNING
Ring Travelers of greater stability are necessary. Wentworth Double Duty, Wentworth Gravity and Gravity Express meet these requirements.
Duplex Twister Travelers — Berylian Finish Steel Travelers for Silk and Rayon
NATIONAL RING TRAVELER CO.
PROVIDENCE, R. I. - CHARLOTTE, N. C.
SOUTHERN OFFICE— 131 West First St.—Charlotte, N. C.—L. Everett Taylor, Southern Agent
Southern Representatives: H. B. Askew, P. O. Box 272, Atlanta, Ga.--Otto V. Pratt, Union Mills, N. C.--W. S. Johnstone, Charlotte, N. C.

DYPENOL
A HARTEX PRODUCT

THE IDEAL *Dry Mercerizing* PENETRANT

• An outstanding contribution to better mercerization. Improves fabric quality by increasing the "degree of mercerization." Adds to dyeing quality and strength of yarns. Imparts a higher and more uniform luster. Permits operation of mercerizing ranges at faster production speeds. Economical too, only small quantity needed to give desired results. These, and many other important advantages of DYPENOL will add "dollars" to your processing profits. Write for further information about this important development of Hartex research.

DYPENOL COMPLETELY ELIMINATES BOILING-OUT OR WETTING-OUT BEFORE MERCERIZATION

• • • Makes possible COMPLETE MERCERIZATION as indicated by maximum BARIUM ACTIVITY NUMBERS*. . . enabling mercerizers of piece-goods to meet new government specifications.

**Write for method of determining BARIUM ACTIVITY NUMBERS*

ALWAYS READY TO RENDER SERVICE

THE HART PRODUCTS CORP.
MANUFACTURING CHEMISTS
1440 BROADWAY • NEW YORK, N. Y.

HOW OTHER MEN MANAGE

Defect in Pile Fabric

THE following question appeared on page 103 of the August 1940 issue of COTTON:

EDITOR COTTON:

We are making a pile fabric using two warps, and every now and then we are troubled with an objectionable place or effect that looks something like splashes or light places in the fabric, or places resembling fabric that has been wet. The center of this splash or defect in the cloth is redder than the other parts of it, and the splash seems to taper off or shade like a wet spot on any other piece of cloth. The edges of the splotch or splash look frosty around the edges. This defect does not run evenly all the way across the cloth fillingwise, but runs rather irregularly fillingwise.

The pile fabric is made using two warps, the bottom beam is running 14s and the top beam, where our trouble lies, is run with 9s yarn. Of course, the bottom warp makes the bottom side of the cloth and the top beam makes the top. The top beam runs with 36 per cent more warp per yard than the bottom beam and the warp from the top beam is fed in with a special roll.

The goods are beam-dyed with Red F direct dye, using a 40 fluid starch in the size compound. Our size formula calls for 32 pounds of starch and 5 per cent soft material. This is mixed cold and boiled for 60 minutes. The compound is put in 20 minutes before the cooking is finished.

When we are running our warp on the slasher we can see where the ends of the flannel come together on the squeeze rolls, but this only shows very little in the goods. We are running this on beam-dyed work and as we do not completely dry the beams before slashing, we run the damp beam-dyed work over a 7-foot cylinder to dry, at the slasher, and the yarn is then run on over three drying cylinders on the slasher. In other words, the first cylinder at the slasher simply dries the yarn from the beam-dyed work and then the yarn passes into the size box, through the squeeze rolls, and then over the three cylinders. We use a double size box with two 750 pound squeeze rolls, and the size is always maintained at the proper level in the size box.

So far we have been unable to determine just what these splashes or defects in this pile fabric are. It occurs to us that it might be a slashing trouble, but then it may be loom trouble. We are unable to see this defect at the loom while we are looking for it, but it invariably turns up in the cloth after we have taken it from the loom. It may be on the loom all the time but we have yet to be able to catch it.

Any suggestions as to how we might remedy this trouble will be greatly appreciated.

CONTRIBUTOR NO. 7097

The following answers were submitted by mill men, some of which requested to see the sample fabric before giving an opinion.

EDITOR COTTON:

After reading your mill man friend's comments concerning the trouble he is having on his pile fabric, I am inclined to believe that his trouble is a loom trouble rather than from the slasher.

These goods are evidently being made with the cloth being wound up too tight and pressing against the sand roll. This can be remedied some by easing up on the tension and thus winding the cloth a little slacker, or it can be eliminated entirely by providing a take-up roll similar to the one on a C. & K. loom.

The whole trouble lies in the fact that the cloth is being wound too tight and is pressing against the sand roll. Our friend might find some way to get around this other than those suggestions I have offered, but I am confident that he will find this to be the source of his trouble.

CONTRIBUTOR NO. 7144

◆

EDITOR COTTON:

We have examined the cloth which you sent and would like to offer the following suggestions:

We think it would be advisable for the mill to run these warps as quickly after they are dyed as is practical. In doing this it will prevent as much dripping of the water through the beam as possible. If they have compressed air we would suggest that they blow these beams out and run a small set without drying to see if this would not eliminate the trouble.

We would also suggest that they take some of the goods that are already woven which have this defect and run them through a tenter through a warm water bath. Our dyer stated that they used to have quite a bit of this trouble and the way they overcame it was to run the cloth through the tenter through a warm solution of water.

CONTRIBUTOR NO. 7145

◆

EDITOR COTTON:

With reference to the sample of pile cloth sent us, we have looked at it closely and none of us recall having seen anything like it before, so whatever I end up writing will be theory, and not actual knowledge.

I do not believe this defect could possibly be caused by the loom; it looks to us as though the cloth had been wet, from some cause, and did not dry evenly. We are taking for granted that the sample is just as the cloth comes from the loom without subsequent processing, finishing, etc. If this is true, then we feel that this trouble is either caused in the dyeing or slashing. This direct dye as you know is terrible about bleeding and under certain circumstances migrating from one spot to another. We have had a great deal of trouble with direct dyes when we tried to starch them. In fact the laundry said that the starching was done at a very low temperature, but even so the fabric was completely ruined. There was no resemblance, though, in our fabric after starching to the defect in this sample. We realize, too, that dyeing done in most mills is by far better than ours and would probably stand a much higher temperature in the starching process.

The following things were suggested: The beam not having dried completely before slashing might result in the yarn taking up different amounts of starch while being slashed, which would allow it to dry unevenly. Varying speeds on the slasher. The beam, before slashing, being left to lie on the floor any

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

great length of time in a wet condition would allow the dye to migrate or run to the bottom of the beam. This, to me, seems to be a logical cause of this trouble. If for any reason the squeeze rolls on the slasher were not concentric, not especially in the sense of blanket lap, but due to flat places on the roll, and the weight was not evenly distributed, it seems logical to conclude that different amounts of starch would be left on the yarn and it would not dry evenly.

It is possible for the squeeze roll not to be of the same diameter across the entire width of the roll. This is also true of the size roll if it has ever been machined down. Either of these two things would not allow the yarn to have the same bite from the rolls. This should show up on the slasher as slack yarn on part of the sheet of yarn passing through the machine.

You note that I am trying to keep out of a hole. I'm guessing with all my might, which is about all that I can say for these reasons that I am advancing. This slackness or varying tension may be so slight as not to be noticeable on the slasher, but I do believe it would affect the amount of starch that went on the yarn. Uneven dye beams, high and low places on the beam, should give about the same slackness. If the delivery roll is built up evenly with cloth on the front of the slasher it would vary the tension on the sheet of yarn, holding some of the yarn closer to the cylinder and causing it to dry more or less as the case may be. This would be especially true on non-positively-driven cylinders.

CONTRIBUTOR NO. 7146

◆

THE following discussion is for a problem submitted (with sample) by "CONTRIBUTOR NO. 7097", on page 103 of the August 1940 issue, who is having trouble with running his pile fabric.

Problem: Light places in direct dyed pile fabric evident after goods are taken from the loom. Ground warp 14s beam dyed with direct Red F. Pile warp 9s beam dyed direct Red F.

It is extremely difficult to solve this type problem with a "to the point" answer without observing existing processing in the plant first hand. Since this type of defect has been traced from a number of sources it wouldn't be wise to offer a single solution, but rather discuss the possible contributing factors in a general discussion. By following through the plant and making the necessary observations the trouble should be easily located and remedied.

Dyeing: Many blotchy and uneven dyeings can come out of the dye house and go without notice until the goods are inspected for shipment. Direct dye-baths should contain an adequate percentage of a suitable wetting agent in order that they penetrate and level properly. Cotton yarns in some cases are boiled (scoured), or boiled and bleached before dyeing, but in a number of cases are grey dyed for low priced goods, or under the strain of competitive pressure.

The percentage wetting agent required should be determined by making up one liter of the dye-bath, adjusting to the temperature that a plant batch would be started and adding sufficient wetting agent to bring about instant wetting of the yarn in question. A skein of yarn should be reeled for the wetting out test of sufficient weight to bring about the same ratio of yarn to liquor as would be met with in the plant operation. Fresh baths and skeins must be at hand until the correct percentage is determined.

If the dye penetrates properly and customary dyeing procedure is followed level shades will follow. Heavy shades should be rinsed properly to eliminate surplus dye on the surface. After dyeing and rinsing a sample of yarn should not bleed when immersed and churned in water at room temperature, or considerably higher depending upon the wash fastness of the dye in question.

Pre-drying: Pre-drying of beam direct dyed warps prior to entering the size box can be done satisfactorily by passing the composite warp through an enclosure provided with hot air in circulation. This type of drying allows the entire surface of the yarn to dry uniformly and there is no dye migration. Composite direct dyed warps, partially or totally dried on a single cylinder have been known to give two distinct shades. The dye migrates toward the heated surface giving a deeper shade thereby leaving the exposed surface correspondingly lighter. Uneven, or dented cylinders bring about further complications and blotchy effects. If cylinder drying is preferred it is best to use them in pairs and assuming the yarn as a fabric give equal drying to face and back. The same steam pressure should be applied to each pair of the cylinders contacted first. All cylinders should be free of dents and kept in such condition. The removal of condensate should be properly taken care of with buckets, or siphons before the traps.

Slashing: The yarn should be adequately, but not overly immersed in the size box. The size solution in most cases is at a temperature much higher than would be recommended for processing without color bleeding, hence the minimum immersion is preferable. The squeeze rolls should be covered with seamless felt jackets for the elimination of lap marks. An alternate covering consists in having flanged rolls and spooling a cushion on same with wool yarn. The latter method is common practice in a number of mills. Conventional slasher cloth jackets are not desirable for this work and with the most trim job their contribution is very pronounced in the goods.

The drying cylinders should be smooth and free of dents so that the yarn is dried uniformly. Large dents leave wet areas and bring about dye migration. The hood covering the cylinders should be examined carefully to see that all moisture from drying is removed. Condensed water dropping on the yarn during drying frequently causes spotty goods.

With a pre-drying and slashing set-up the unit should progress at a uniform speed as is practical. Slow speed means that more water is evaporated before entering the size box and consequently more size is consumed. Higher speeds less pre-drying and less size consumed. Uniformity is essential, for varying percentages of size bring about a difference in handle and appearance of the woven goods.

Sizing Mixtures: The pile warp should be sized with the least amount of starch possible to produce desirable weaving. A heavy starch should not be used. With corn starch not heavier than a 50 fluidity and preferably a chlorinated modification that provides the maximum in clarity of film and slow congealing properties. Tapioca, potato, or sweet potato would be desirable if thinned with an enzymic agent. In every case the resultant size mixture should be "water thin" to allow complete penetration, thereby minimizing the tendency to mask the color with a surplus starch film. Any good softening agent that disperses itself uniformly can be used. An emulsified tallow is desirable in thin sizings, providing one can be selected that does not bring about detergent action in the size box to cause bleeding of color. All size mixtures should be brought to a boil in thirty minutes and boiled one hour. The softening agent may be added prior to the final thirty minutes of the boiling period.

Behavior of Starch Films: Resultant starch films are usually opaque, or clear depending upon the base starch used as well as the modification. Most corn starches regardless of their modification produce films with varying degrees of opacity. Potato and tapioca properly modified produce extremely clear films. Starch films remain plastic so long as they are exposed to an atmosphere containing adequate moisture. Usually plastic films become progressively more brittle at humidities below seventy per cent. Any starch film void of plasticity can be reduced to a white powder, even though the film was considered water clear at the start. A thin sheet of glass would behave in the same manner.

Gray, or "Scratchy" Goods: Sized yarn coming from the slasher with six to seven per cent moisture provides ample moisture for a flexible film and during weaving flexibility is maintained with the humidification system. Graying, or "scratchy" colored goods usually make their appearance after leaving the weave room. If the outer humidity is high there is no evidence of such defects, for the film remains plastic. Low humidities as prevail on dry summer days bring about a rapid drop in film moisture and a brittle film. If goods are dry processed such as brushing, winding, etc., often irregular pressures existing between feed rolls cause film bruises and scratches resulting in light or scraped effects. This type defect can easily be recognized by steaming the fabric and ironing for they will disappear. On the type fabric as in question to produce such an effect place a sample face down on a table and draw the thumb nail against the back with reasonable pressure. If the fabric has been exposed at low humidity for a time there will be a light streak across the face. Various effects can be produced by passing the fabric between hard rolls that are not smooth on the surface.

Some of these tendencies can be minimized with the incorporation of a small amount of glycerine in the size formula. A pint to a quart to a full mixture is usually sufficient, acting as a plasticizer and hygroscopic to reduce film brittleness. Sometimes it that are used in making the dyeing. This adds color is wise to tint the sizing mixture with the same colors to the starch and even though powdered it is more the color of the yarn.

Finally all dry processing machinery should be examined with respect to smoothness of rolls. The rolls, if hard and rough, should be smoothed down in a lathe and covered with a soft felt covering. Preferably goods of this type should be handled in cloth rooms provided with artificial humidity approaching closely weave room conditions.

CONTRIBUTOR No. 7160

Part of Card Controlling Strips

EDITOR COTTON:

This is in answer to "CONTRIBUTOR No. 7045" who has asked on page 114 of the June 1940 issue of COTTON, "what part of the cotton card controls the amount of strips taken out by the top flats?"

The stripping plate (sometimes called the percentage plate) governs the amount of strips removed; that is, the setting of this plate controls the amount of strips . . . the farther away it is set from the cylinder the greater the amount of strips will be made. Therefore a wide setting will give heavy strips. This setting is varied to give the desired amount of strips; on some cards a .027-inch setting will give the proper amount while other cards in the same room may require .030-inch or .034-inch.

There is a limit as to how far this plate can be set; if it is set too far away the stock will curl up and produce a web with strings of cotton resembling pieces of roving. On the other hand, it can be set up too close and will not produce any strips at all.

After it has been decided what amount of strips will be removed, a good way to check on this is to take a lap, weigh it carefully, clean the card out by stripping the cylinder and let all stock run out before relapping. Then when the lap is out, weigh the sliver produced and the strips also, and it is easy to figure the percentage of strips from this. All white waste should be kept also and figured in.

After the card gets filled up, after about 10 minutes run, take about 20 of the strips for the full length of the flats and weigh them on grain scales (the more weighed the better the average). Then take one card at a time, being careful to let it fill up as nearly alike the first as possible and weigh strips from each. The stripping plate can then be set to give the standard percentage of strips. If all cards are not set alike as to percentage of strips removed there will be much uneven work.

CONTRIBUTOR No. 7147

EDITOR COTTON:

I notice in the June issue of COTTON a question as to what part of the card controls the amount of strips taken out by the top flats. The most common method of controlling the amount of strips taken out is by changing the setting of the front plate. To get more strips the front plate is backed off and to get less strips the front plate is set closer.

All the settings on a card except the front plate start with a more open setting and, moving with the direction of motion of the cylinder, they are closed up. For example, the mote knives are usually set .012 and .010-inch, .010 and .007-inch, or .007 and .005-inch, the back plate at the bottom to a .029-inch, and the back plate at the top to a .022-inch, the flats at the back to a .010-inch and at the front to a .009-inch, and the bottom screen in front to ¼-inch, middle to .064-inch, and back to .017-inch.

The reason for this is that as the cylinder revolves it creates a draft of air and these settings tend to make the air follow the cylinder. By setting the front plate closer at the top and wider at the bottom this current of air is broken and turned out, and it tends to carry the cotton with it. This cotton is known as strips.

The closer the front plate is set the more this cotton is held against the cylinder, and the less chance it has of escaping as strips.

Another way of controlling the strips is by changing the speed of the flats. To get more strips, speed up the flats, and to get less strips, slow down the flats.

CONTRIBUTOR No. 7148

EDITOR COTTON:

In answer to "CONTRIBUTOR No. 7045", one might say that the front knife plate controls the amount of strips released by each individual flat. A wider setting will increase the amount of strips. The speed of the flats controls the total amount of strips removed.

"CONTRIBUTOR No. 7045" should try this: remove the stripping stick and set the plate at .012-inch. Start the card and let the stripping fall on the doffer bonnet (if there are any strips coming out). Now if there is no stripping coming out, speed the flats as fast as possible and there will still be no strippings.

Next set the plate at .022-inch and start the card. There will be some strippings but not enough so that the strips will hold together. Then set the plate at .032-inch and the chances are the strips will hold together by a few strands of cotton between each strip. The test may be carried even further by setting the plate wider if one wishes.

Then if the carder thinks that not enough strips are being removed, speed up the flats. If the worm driving the flats gear is a single one, replace it with a double worm, or even a larger flat driving pulley may be put on the cylinder shaft.

CONTRIBUTOR No. 7149

Setting Pick on X-Family Looms

THERE is a new rule for setting the pick on the "X Family" of looms, according to the August 1940 issue of *Cotton Chats*, published by Draper Corporation, Hopedale, Mass. The new rule sets up the distance of the reed from the fell of the cloth as the guide for timing the start of the pick.

As a service to the industry and to those men not receiving *Cotton Chats*, the instructions and comments as given by Draper Corporation are reproduced as follows:

The common practice has been to set the pick on the top center of the crank shaft. It was a convenient rule as looms were once built. Actually the position of the crank has nothing to do with the timing of the pick.

Mill complaints of picking troubles on some of the early X Model looms started our research that proved the fallacy of the old rule.

Investigation proved that nearly all of the picking troubles and many shuttle troubles in mills starting up high speed looms were caused by the rule to set the pick on the top center.

Timing the Pick. The time to start the pick is when the shed is open just enough to let the shuttle enter without undue strain on the yarn.

The power applied should take the shuttle out just as the closing shed clamps down on it—but without damage to the selvage threads.

The position of the lay determines the size of the opening of the shed—when the opening is just enough to permit the shuttle to enter.

On our E Model looms it just happened that the top center of the crank coincided with a position of the lay that gave a suitable opening in the shed.

X Family looms have the pitman point on the sword lower than on the older looms, bringing the lay farther back when the crank is on top center.

Picking on top center on these looms gives a late pick, requiring extra power and speeding up the shuttle.

Either extra picking power or extra shuttle speed causes many troubles on high speed looms.

From the Fell of the Cloth to the Reed. How we found the true position of the lay when the shed is right for the shuttle to enter is worth telling.

Using the stroboscope in our dark room we watched the shuttle entering and leaving the shed with various starting times for the pick. When we found the proper shed conditions, we measured the distance from the fell of the cloth to the reed. This gave us a standard for setting the pick on other looms of the same model, speed and weaving conditions.

At the recommended speeds on our several high speed models the distance varied from 2⅛ to 2⅜ inches.

It will be less when the loom is run at unusually high speed—sometimes as little as 1⅞ inches.

It will be slightly less if the harness cams give a shed relatively large for the shuttle; a little more if the shed is rather small for the shuttle.

On Heavy Goods. On goods with a pronounced bump in the beat-up, it was necessary under the old rule to set the pick later because the fell of the cloth was nearer the reed.

The new setting automatically takes care of this because the setting is from the fell of the cloth.

The New Rule. To set the pick on X Family high speed looms, the distance from the reed to the fell of

the cloth should be as follows:

2⅛ inches on X and XL Models at normal speeds.

2⅜ inches on XD and XK Models up to 180 picks per minute; 2⅛ at over 180.

With the lay in this position, set pick cam, pick ball and lug straps as usual for starting the pick. Be sure the cam and hub are tight and that when set for the start of the pick there is no play in the parts. Set pick arms and power strap according to our Instruction Sheet No. 518.

At recommended loom speeds and a normal shed, this setting of pick motion parts will give the proper power for driving the shuttle.

Under the old rule, top center was the start from which you made any needed adjustments.

If you need adjustments on high speed looms, start with the figures given. When you find the setting you desire, measure the distance from the reed to the fell of the cloth.

In any adjustments, increase the power of the pick only as a last resort. Watch the selvage threads to be sure the shuttle enters and leaves the shed cleanly.

Take Part in the Discussion Meeting

EDITOR COTTON:

I can recall in the days gone by in the textile industry that if a man got hold of a new idea he would tuck it under his wings and not let anyone else know about it, hoping at the time that his idea would put the other fellow out of business. For the most part those days are gone forever, thank goodness; but so long as the mill men of the industry did not exchange ideas the textile industry was at a standstill.

The only way for the textile industry to make progress, and one of the most important ways that it did make progress was through the exchange of ideas at the discussion meetings attended by the overseers and superintendents of the country. It was here that they could get together and discuss their mutual problems.

No one man knows it all about this game of running a textile plant and the man that thinks he knows everything is due for a fall. We can learn many things from our fellow mill men at the discussion meetings, and we can learn many things from the operatives in the plant. I once heard a superintendent say that if something was going on in his spinning room that he didn't know about, he would watch the doffers awhile and would find out.

I know there is a limit to the information that we can impart, and we don't want to be peddlers about what we know—I am sure there are times that we should be careful in expressing our views, but when it comes to some point in manufacturing I think we can attend and take part in the discussion meetings. I am sure that the men that have meant most to industries are those that have been unselfish in giving out information and in expressing their own views.

I am sorry to see some groups come to the discussion meetings to get all they can without giving out anything in return. It would be the smart thing to realize that we don't have many secrets and that the other fellow might be able to help us out considerably if we would only tell our own experiences in the mill.

I am a firm believer in "united we stand and divided we fall." If we all will take a larger part in the discussion meetings, giving what information we can, we will all certainly take more home with us.

CONTRIBUTOR NO. 7152

Comb Box Lubrication

EDITOR COTTON:

I am not on the defensive, but the evidences are that I did a superficial job in answering the "Comb Box Lubrication" questions as submitted by "CONTRIBUTOR NO. 6826" in the May 1938 issue of COTTON, a summary of the various answers and further comment on which appeared on page 108 of the May 1940 issue.

His questions were somewhat general in their application, and in the running of several tests, I tried to give answers that would cover most of the information I had gained, as well as to be as interesting as possible, thus the reason for the superficial effect. However, in this instance I shall try to clarify those questions so answered to the satisfaction of my fellow "CONTRIBUTOR NO. 6826" as well as other readers that might be interested; that is if the editors are not opposed to a few more words added to the 5000 that have already been published.

Answering Question No. 1, ["What is the minimum, average and maximum speed of the comb box pulleys?"] Our comb boxes have a combination of pulleys; when running the cylinder 168 r.p.m. we run 1800 r.p.m. on comb box pulleys, with the variation I mentioned in the original answer [20 per cent]. It is quite evident that every card cylinder belt is not of the same tautness, the same frictional clinging surface, the same condition of cylinder bearings, arches with the same distances from the cylinder ends, which determines high and low speed of cylinders, or even the comb and cylinder bands the same diameter, and lastly the running condition of the comb box itself may be lacking in freedom of revolving to what it should be. New bands do pull much better than those that have run for some time, and then older the longer they become; most cylinder bands outwear two to three comb bands.

Question 2, ["What is the difference between the temperature of the comb box and the room in which it is running?"] Tests made and supervised by myself were on two different kinds of oils, in two different mills. On one I can say definitely that the outside temperature was ranging from 90 to 100 degrees, comb boxes averaging 132 degrees. This temperature was determined by placing the bulb of the thermometer into the opening of the overflow gauge for one full minute. This was allowed to cool considerably

before being placed into the next comb box for recording the existing temperature.

On the other method, which I still think superficial or inaccurate, I merely had a research man to record the figures as they were, studied them a small amount, and turned in the report.

My reason for stating the method inaccurate was the instrument devised and used. It consisted of a ring being made to fit within the top opening of the comb boxes, and the thermometer soldered onto this ring, having the bulb suspended about one-half inch about the top of the setscrew in the fork, and the only oil ever touching the bulb was that thrown by the eccentric motion upward to it for contact. Very little oil ever touched the bulb, and the oil that did was naturally cooled a small amount ere it reached the bulb itself. Time allowed to each box was 90 seconds; it had a variation of 10 to 15 degrees above room temperature. The oil used was a blended or compounded oil with a soap base.

Question 5, ["What type oil gives best results; light or heavy, compound or straight run?"] We were using 70 viscosity straight run residum oil. However, in later experiments, I have found that oil of some 55 to 60 viscosity contains less solid matter, and the boxes hold up in better mechanical condition.

Color of oil may mean anything or nothing. When the better grades leave the refinery much of it is almost as clear as water, the majority having a yellowish cast, and takes color from the containers that it is shipped in, as many of these barrels or drums are used over and over again, and merely rebranded for the oil that is put into them. No harm done, however, if the next filling of oil is of the same bases as the original ones were.

In my original answer to Question 5 I mentioned a compounded oil with a 20 per cent petrolatum base—which is petroleum jelly—that I favored above any I ever used. This special oil had properties that stood up, and also the condition of the comb boxes remained in extraordinary good condition without sludge, and clogged up oil grooves, etc. The test was experimental, as I stated, for a period of six months.

Peculiarly, the oil manufacturer made up enough to run the 48 cards for a period of six months as we requested, then when we asked for this special oil in barrel lots they were not able to duplicate it, or at least the so called duplicated oil lacked the properties as the original sample.

Regarding compounded oils, which I believe are better for certain purposes than others—there should enter into this term more than a mere name.

Compounded or blended oils may contain mineral oils, vegetable oils, animal fats, either virgin or rancid, and even soap, certain minerals, alkalies, paste or even some may have some glue as far as we know. Then further if any of our readers have gone into their oil matter in a searching manner, using a microscopic test with a slide, solids are often present. What these are the ordinary layman does not have equipment to ascertain. Some of the oil companies have analyzed a competitor's product, giving all the information of its content, but were not quite so free with their own. So we have to remain in the dark unless we are able to get the management to have a testing laboratory to break down the analyses to the smallest percentages of contents. The best solution that I know is to trade with a reputable manufacturer.

Room temperatures—which I hope will soon be offset with air conditioning as standard equipment, the card room being the last of the departments in those mills already having it to get it, but needs it equally as much as any other—I feel have much to do with the results of oils, and speeds and mechanical condition.

CONTRIBUTOR NO. 6838

"Wash" on Research

EDITOR COTTON:

The readers of this department know that as a rule I do not entirely agree with most contributors. However, at my age, I have experienced many instances of being obliged, by more experience and by better information, to change opinions which I once thought perfect. The older we grow the more likely we are to doubt our own judgment and to pay more respect to the judgment of others. So I was right when I asked the question* "Does it pay to have a research department?"

I have not changed my mind.

Look up the July 1938 issue of COTTON, page 93, and here you will find an article from the pen of "CONTRIBUTOR NO. 6741". He gives me the title of S.S.E. (meaning Super Speeder Engineer), which I accept with thanks. Folks that have titles do things; folks that have not just *chin*.

"CONTRIBUTOR NO. 6741" confesses that he is a research fellow. Here are three questions that should be asked concerning every man doing research work: "What did he do?" "Was it worth doing?" "What did he achieve?"

Let me state here that I believe in a textile research department, such as the Textile Foundation and the United States Institute for Textile Research, Inc. We need no other in any of our individual cotton mills because any new discovery is passed on to us.

"CONTRIBUTOR NO. 6741" is wrong when he states "WASH" is reaching for new conquests in the field of research. "WASH" was a research fellow years ago, and I compare the research department to that of the efficiency engineer. It was in the early 1890's that we first heard of the efficiency engineer, and, like the research department, they made a lot of trouble for the superintendent and overseers, the same as the research department is now doing in some mills. They insisted that others do what they could not do themselves. You hear very little of the efficiency engineer now and I am dead sure that the research department will die the same natural death.

A salesman told me that he witnessed a fire in the picker room of a mill that has a research department. After the fire was extinguished it was found that the solder on the screen cages had melted and had to be sent to the machine shop for repairs. Why did the

*July 1937 "Cotton", page 95. Other discussions on this subject appeared in the following issues: Sept. 37 page 105; Nov. '37 page 98 Mar. '38 page 95; Oct. '38 page 166; Jan. '39 page 87 Feb. '39 page 128; and June '39 page 106.

Stop Bearing Wear Get Even Card Sliver

Dripping, leaking oil won't stay in bearings, so cannot prevent wear. This shortly destroys bearing fit and ruins card setting. Even sliver is impossible then.

NON-FLUID OIL, drip-less and waste-less, stays in bearings until entirely consumed. Dependable lubrication preserves card settings, assuring even sliver. Lubricant cost is much less, for NON-FLUID OIL outlasts oil 3 to 5 times.

Write today for free testing sample and bulletin, "Lubrication of Textile Machinery"

New York & New Jersey Lubricant Co.

Main Office: 292 Madison Ave., New York, N. Y.

Falls L. Thomason, Charlotte, N. C.
Southern Agent

WAREHOUSES:

Charlotte, N. C.
Greenville, S. C.
Atlanta, Ga.
Providence, R. I.
St. Louis, Mo.
Chicago, Ill.
Detroit, Mich.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT. OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

★ ★ ★ ★ ★

RAYON OILS for SIZING and SOAKING

★

RAYLUBRIC 31

A soluble oil for Filament Rayon and Acetate sizing and soaking, readily miscible with gelatin solutions.

HOUGHTO-SIZE AC

A complete size mixture, for Rayon and Acetate warps, embodying binder, softener, penetrant and preservative.

HOUGHTO-SIZE SR

A sizing compound used with gum for spun rayon and mixtures of spun rayon with other fibres.

Quality Products for Every Processing Need

E. F. HOUGHTON & CO.

240 W. Somerset Street, Philadelphia, Pa.
1301-05 W. Morehead St., Charlotte, N. C.

1865 1940 75 years — *The HOUGHTON LINE*

solder melt? I bet the research department in the mill in question does not know.

This was caused by the picker being stopped immediately when the fire was discovered and the stock around the cages created such a hot blaze that it melted the solder, and of course there was much expense and loss in production.

When I was in the research department we would dope out such things. The moment a fire is noticed in a picker the feed should be stopped, the fan belt thrown off, and then one should run to the dust room to see that it is free of fire. If possible a small hose should be used to put out the fire. When the fire is out, stop the machine and try to locate the cause of the fire. Nine times out of ten if this procedure is followed there will be no damage to the picker.

Can a research department in a cotton mill prove that it is worth more than it costs?

WASH (R. I.)

Why Certain Size Coiler Tube Gears

Here is an explanation of why 10-inch coiler tube gears cannot be used satisfactorily with 12-inch cans . . . . . .

AN INQUIRY to the editors of COTTON asked "Why is it not possible to use a 10-inch tube gear for a 12-inch sliver can?" A mill man has answered this as follows:

This question can probably be best answered by sketches showing a 12-inch sliver can and a 10-inch tube gear (A, Fig. 1) and a 12-inch sliver can with a 12-inch tube gear in its proper position (B, Fig. 1).

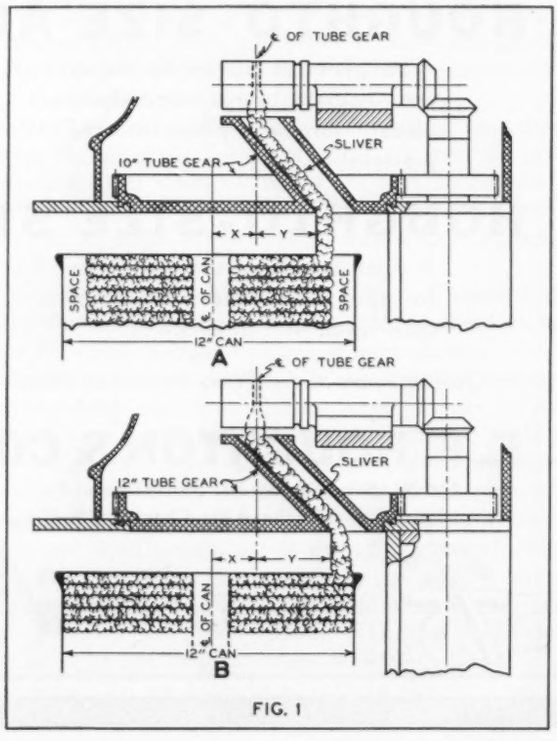


FIG. 1

It is assumed that it is a card coiler that the inquirer had reference to. It is also assumed that the 10-inch and 12-inch coiler tube gears have the same number of teeth and are the same pitch, which is true with certain makes of cards, and that the gears will fit interchangeably into the tube gear plate.

The dimension Y in Figs. A and B is generally known as the "throw" of the tube gear. It must be so proportioned that it will lay the sliver close to the inside edge of the can and then throw it just far enough in the opposite direction beyond the center of the can so as to leave a hole to the bottom of the can. For this reason, it will be found that the Y dimension varies with the size of the can.

Any attempt, therefore, to use a 10-inch tube gear with a 12-inch can would result in the sliver can not being properly filled, leaving a space around its inside (see A, in Fig. 1), which the sliver would slide into as the can was filling up, becoming more or less tangled or snarled, resulting in broken ends at the back of the drawing frames.

CONTRIBUTOR NO. 7159

Further Causes of "Washboard Shuttles"

Three major sources of this trouble are given along with some others, and their remedies .

EDITOR COTTON:

In answer to the question of "CONTRIBUTOR NO. 7033" on page 87 of the March 1940 issue of COTTON, in which he asks the cause of wavy or "washboard" shuttles, I wish to submit my opinion and experience on some of the causes and remedies in the hope of aiding him in solving his problem.

The back of a shuttle will become wavy and resemble a washboard if it does not stay against the reed at all times as it goes back and forth through the shed. In other words, the shuttle must ride on the reed and travel in a straight line as flatly and firmly against the reed as it would if a person laid the reed flat on a table and pushed the shuttle over it with his hand, allowing the shuttle to rest on the reed by virtue of its own weight. Also, if the shuttle rises upward from the raceboard the same condition will result.

The most outstanding causes of this condition may be attributed either to the picking motion, parallel motion, or shedding motion. Given herewith is a list of these causes as regards the motion concerned:

Picking Motion. Loom picking too early. The loom should pick on top center so as to start the shut-

Other discussions of the causes of washboard shuttles have appeared this year as follows: April, page 130; May, page 110; and August, page 110.

Increased Yield and New Savings

with PROCTOR METALLIC-CLOTHED WORSTED CARD

The revolutionary Proctor Metallic-Clothed Worsted Cards have been in successful mill operation for over seven years now and consequently have gone far beyond the research and experimental stage. Mill men will tell you that these Proctor Machines give them a greater yield, increased production, clearer sliver and are entirely free from the necessity of stripping fiber because the card is so constructed that it strips itself . . . and that means a big saving in time, labor and stripping waste. ● The best proof of the important all-around advantages offered by this advanced type carding equipment is the fact that many mills, after having initial units in operation for several years, have installed additional machines. ● The Proctor Metallic-Clothed Worsted Card is also adapted for handling rayon staple fiber above five deniers. ● Why not give us the opportunity to show you what money-saving benefits this remarkable carding machine can bring to you ?

PROCTOR & SCHWARTZ, INC.
PHILADELPHIA

Instant Wetting Out!

Draves Test Shows New Nopco D L N wets out *instantly!*

Among the many advantages of the New Nopco **D L N** over other wetting out agents is its quick action even at lowest concentrations. Check this imposing list for answers to your wetting out problems.

1. Wets out in less than a second according to Draves Test.
2. Wets out in solutions as low as one tenth of 1%.
3. **Nopco D L N** can be blended with all types of vegetable oils.
4. Excellent results to be had with Cotton, Rayon, Acetate and Rayon-Acetate mixtures.
5. Exceptional re-wetting out properties applicable for Sanforizing and twist-setting operations.
6. Offered at low cost by a reliable manufacturer.

Nopco D L N can help cut your wetting out costs and speed production. Get the facts today.

NOPCO
REG. U.S. PAT. OFF.

BOSTON
CEDARTOWN, GA.
CHICAGO
LOS ANGELES

NATIONAL OIL PRODUCTS CO.
HARRISON, NEW JERSEY

KNOWN by the FRIENDS IT KEEPS

FOR many years EXSIZE has been used by a large and ever-growing list of finishing plants. We are proud of this long record of continuous service, because it proves that EXSIZE is unsurpassed for the thorough removal of starch size at low cost. Let EXSIZE help solve your problems, too.

DESIZE with EXSIZE

Our laboratory facilities and practical field men are available to help you with desizing problems.

PABST SALES COMPANY, CHICAGO, ILL.

Warehouses at New York, and Textile Warehouse Co., Greenville, S. C.

Copyright 1940, Pabst Brewing Company, Milwaukee

tle across the reed as the crankshaft starts from top to back center. At this time the reed is tilted slightly to the back and the shuttle will tend to lie against the reed because of its own weight, and if other things are equal, it will be against the reed during its entire trip across the lay. If the loom picks before the crankshaft reaches top center the shuttle will start through the shed before the reed reaches this tilted position, thus causing the reed to leave the shuttle for a short time. When this happens the path of the shuttle is not sraight, allowing it to bounce back and forth against the reed all the way across. Of course, the remedy is to set the pick cam.

Parallel Motion. 1. Pickers not parallel. It can readily be seen that the path of the shuttle will be easily influenced by a picker being too high, too low, turned to one side, loose on the stick, or worn out. Pickers should be kept in good condition and properly paralleled at all times, and if not they will cause a lot of damage to shuttles by wearing them out and also by throwing them out and busting them.

2. Loose heel bolt, picker foot, or heel spring bolt.

3. Worn picker foot, parallel tongue, parallel block or parallel shoe. These parts, if worn very badly, will make it impossible for a fixer to parallel a picker correctly and replacement of these will pay dividends in a very short time.

Shedding Motion. 1. Shed not open wide enough. This will cause the shuttle to hit the top of the shed and prevent it from running straight.

2. Yarn too high off the raceboard. This will cause the shuttle to rise when it enters the shed and hence will continue to bounce up and down.

3. Harness not level. This will give the same effect as the previous two, but will affect the path of the shuttle only in one direction of its movement.

Other Causes. 1. Reed cap not holding reed firmly in reed seat, allowing it to be loose.

2. Shuttle boxes open too wide at front and "pinched in" too closely at back. This will give the shuttle a tendency to leave the reed as soon as it leaves the box.

3. Pittman arms loose on eccentric pin worn.

4. Crankshaft or box worn.

The parts listed in 3 and 4 should never be allowed to become worn enough to cause the shuttle to be worn. But nevertheless, if they are worn badly and have enough lost motion the shuttle will be worn.

Some of the causes listed would alone have a great deal of influence on the life and wear of the shuttle, even if all other parts of the loom could be in perfect condition. While on the other hand some of these on the list would have very little effect alone, but a combination of three or four could give quite a bit of trouble. After all, a number of minor causes added together will quite often amount to a great deal more than one major cause because the minor ones are the hardest to find and the major ones will stand out like a sore thumb.

CONTRIBUTOR No. 7143

HELPFUL BOOKLETS FREE

Here is presented an important service used every month by hundreds of COTTON readers. The listings explain themselves. The Manuals, Reference Books and Catalogs, containing information of unusual value in mill construction and operation, will be sent you without obligation. Read through the list carefully. Then simply fill in on the coupon the number of those which interest you, and mail it to COTTON.

This service is for men engaged in textile manufacturing only. Requests received from those not in the industry cannot be handled.

Advertisers in this Issue Offer You . . . . . .

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-In-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

154. Johnson Bronze Bulletin No. 340—showing over 300 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book on variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washing. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full-Fashioned Division, Norristown, Pa.

188. Form 496—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 N. Franklin St., Chicago, Ill.

213. Saco-Lowell Cotton Machinery—Twisting—a 36 page illustrated brochure explaining the company's twisters and parts, including the four basic type twisters, features of new construction and general notes on twisting. Production calculations and specifications are included. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

214. Saco-Lowell Cotton Machinery—Spinning—the second edition of a 56-page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

223. Alloyed Iron in Southern Industrial Fields—16 page illustrated catalog dealing with the properties available in modern cast irons. International Nickel Co., 67 Wall St., New York, N. Y.

224. "Tank Talk"—Sixteen page booklet of illustrations showing various types of elevated steel tanks, constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. R. D. Cole Manufacturing Company, Newnan, Georgia.

233. Catalog No. 22—an attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. Meese, Inc., Madison, Ind.

234. They Stay Brighter Longer—This interesting illustrated booklet containing facts about Mazda lamps will be sent you free on request. General Electric Company, Dept. 166, Nela Park, Cleveland, Ohio.

240. The New Proctor Automatic Yarn Dryer—6 page illustrated folder describing the new Proctor automatic yarn dryer which has the exclusive new Proctor traveling skein protector. Proctor & Schwartz, Inc., Philadelphia, Pa.

253. Bown Air-O-Line Controllers — This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive. 32 illustrated pages describing the various Brown Controllers. The Brown Instrument Co., Philadelphia, Pa.

258. Automatic Overhead Cleaner for Spinning, Winding, Warping and Twisting—24 page booklet showing the new American MonoRail automatic cleaner in operation on MonoRail track circuit over Spinning, Warping, Winding, Twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Company, Cleveland, Ohio.

260. Lubrication—This attractive booklet contains valuable and interesting articles on loom lubrication and also on spinning design and the function of spindle oils. The Texas Company, New York, N. Y.

261. The Brown Moist-O-Graph—16 page booklet describing the Brown Moist-O-Graph which measures, records and controls the moisture content of cotton warp yarns. The Brown Instrument Company, Philadelphia, Pa.

263. Gastonia Brushes—New catalog and price list showing the complete line of brushes for the textile mill. Gastonia Brush Co., Gastonia, N. C.

272. Where to Buy Monel Metal Textile Equipment—Attractive booklet which lists the names and addresses of experienced fabricators of Monel Metal equipment for the textile mill. The International Nickel Company, Inc., 67 Wall St., New York, N. Y.

284. Morton Nickel Iron Quick Opening Handle Gate Valve—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Manufactured in nickel, stainless steel and stainless steel trim. Morton Machine Works, Columbus, Georgia.

286. Triton W-30—Study of wetting agents and their activity with recommendations for textile processing. Rohm & Haas Co., Philadelphia, Pa.

289. Caustic Soda Bulletin—a data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas. Pennsylvania Salt Mfg. Co., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile machinery. Hyatt Bearings Division, General Motors Corp., Harrison, N. J.

295. Fence Facts—A new booklet illustrating and describing chain link fence in a variety of styles and four different metals for every type of fencing installation. Also wrought iron fence in various beautiful styles. A concise handling of information for those wanting facts about fence. Page Fence Association, Bridgeport, Conn.

296. Full-Fashioned Hosiery Manufacture — Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery. Gulf Oil Corporation, Pittsburgh, Pa.

301. Norma-Hoffmann Bearings Catalog — Norma-Hoffmann Bearings Corp., Stamford, Conn.

305. Tannate Belting—leaflet describing Rhoads Tannate leather belts and their uses and advantages in textile mill operation. J. E. Rhoads & Sons, Philadelphia, Pa.

307. Lane Canvas Baskets—16 page illustrated booklet describing the Lane line of canvas baskets for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

308. Finnell Scrubbers—illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines. Finnell System, Inc., Elkhart, Ind.

311. The Romance of Prairie Gold—attractive illustrated book which tells the story of corn and the uses of corn products in industry. Corn Products Sales Co., New York, N. Y.

312. Cork—The Modern Roll Covering—attractive booklet outlining the uses and advantages of cork for textile roll covering. Armstrong Cork Products Co., Industrial Division, Textile Products Section, Lancaster, Pa.

314. Winding Production Chart—this useful production chart can be used for any style of winder. Also included are instructions for figuring yarn takeup speeds. Universal Winding Co., Providence, Rhode Island.

315. How Handling Problems Have Been Solved—a 50-page booklet presenting in pictorial form many solutions to industrial handling problems and showing how they reduce costs, save labor, eliminate storage and provide free movement of stock between processes. American MonoRail Company, 13106 Athens Ave., Cleveland, Ohio.

317. Circular Knitting Machines—a fifty-two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex. Sent free on request to Fidelity Machine Company, 3908 Frankford Ave., Philadelphia, Pa.

322. The Application of Soaps and Soap Products to Textile Processing—40-page illustrated booklet covering the principal operations in textile processing. Special notes and suggestions are given for those operations requiring soaps or soap products. Colgate-Palmolive-Peet Company, 105 Hudson St., Jersey City, N. J.

323. Textile Processing with Artic Syntex A and T—50-page illustrated booklet describing the properties of these new materials and giving tentative or suggested formulas for a number of applications in textile processing. Colgate-Palmolive-Peet Co., Jersey City, New Jersey.

327. Sanforizing Machinery—illustrated booklet describing the sanforizing machinery offered by the Textile Finishing Machinery Co., Providence, R. I. This bulletin is available only to finishing plants or executives thereof.

CONTINUED ON PAGE 110

CONTINUED FROM PAGE 109

330. Tools for the Textile Trade—a twelve-page booklet illustrating and describing specially selected tools for all textile mill departments—Loom Fixers, Spinning Room Fixers, etc. Snap-on Tools Corporation, Kenosha, Wisc.

331. Unbrako Self-Locking Hollow Set Screw—Bulletin Form 532 includes illustration and descriptive matter of this latest improvement in socket and screws. This bulletin also features the complete line of "Unbrako" Socket Screws. Standard Pressed Steel Co., Jenkintown, Pa.

332. Hard Maple Flooring—an 8¼ x 11-inch folder featuring a close-up of Northern Hard Maple Flooring and specimen pieces to show grades, prepared for the convenience of architects, builders and others when considering flooring grade requirements. Maple Flooring Mfrs. Assn., 333 South Michigan Ave., Chicago, Ill.

333. Fafnir Ball Bearings for the Textile Industry—Outlining the applications and advantages of ball bearings on textile machinery. Fafnir Bearing Co., New Britain, Conn.

334. Precision Winding for Silk and Rayon Yarns—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. Universal Winding Co., P. O. Box 1605, Providence, R. I.

335. Casters and Wheels—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this. Darnell Corp., Ltd., P. O. Box 4027-N, Station B, Long Beach, California.

337. Sizing and Finishing—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing. Stein, Hall & Co., Inc., New York City.

338. Thickening Materials for Textile Printing—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine. Stein, Hall & Co., Inc., New York City.

340. Notes on Cotton Warp Sizing—a 45-page handbook giving valuable data on the purposes and properties of various sizing products, their uses and preparation, with much information on the operation of slashing equipment. Will help solve many sizing problems. Address The Hart Products Corp., 1440 Broadway, New York City.

343. SKF Better Spinning and Twisting—16-page illustrated catalog containing technical information relating to construction and performance of SKF roller bearing spindles, tension pulleys, guide and idler pulleys and miscellaneous pulley and bearing applications. Distributed by all leading textile machinery manufacturers and SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

346. Dependable Finishing for Modern Elastic Top Hosiery—describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery. Union Special Machine Company, 400 North Franklin St., Chicago, Ill.

347. Rhoplex Resins—Attractive folder discussing the outstanding properties of these Aqueous Dispersions with suggestions for their application to textiles. Rohm & Haas Co., Inc., Philadelphia, Pa.

348. Johnson Ledaloyl Bearing Bronze—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings. Johnson Bronze Company, New Castle, Pa.

350. Theoretical and Applied Silk-Soaking—Attractive 28-page booklet outlining methods of silk-soaking and outlining investigations on the soaking, backwinding and degumming of silk. Hart Products Corp., New York City.

351. Wetsit—Leaflet describing Wetsit, a synthetic aromatic compound with excellent surface tension reducing properties; gives rapid wetting out and thorough penetration; available in three strengths. Jacques Wolf & Co., Passaic, N. J.

352. Lupomin—Leaflet describing Lupomin, a new cation active softening agent for all textiles but especially acetates and rayon crepes; odorless, permanent and easily applied; imparts soft, full feel. Jacques Wolf & Co., Passaic, N. J.

353. Luposec—Leaflet describing Luposec, a waterproofing agent with great stability; soluble in cold or warm water at all temperatures; suitable for all fibres and especially effective in splash-proofing silk hosiery. Jacques Wolf & Co., Passaic, N. J.

355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. As for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14-page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Caro-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing. Rohm & Haas Co., Philadelphia, Pa.

361. Thaumaphos—The textile detergent—Seven page booklet describing Thaumaphos, the wonderful phosphate. Included is a list of the Thauma brands and a survey of their uses in the wet finishing of textiles. Detergent Products Corp., Atlanta, Ga.

362. Leather Belting Calculator—Handy and attractive calculator for determining belt speeds, horsepower per inch of belt widths, etc., will be sent free on request. J. E. Rhoads & Sons, Philadelphia, Pa.

363. Form 769, Condensed Catalog—a 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

364. The Superlock—Form 828—an attractive two-color illustrated 6-page folder describing the "Fastest Overseaming Machine in the World." Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

366. Houghto-Size SR—Leaflet describing a new sizing compound for spun rayon warps which provides high breaking strength, greater elasticity and increased weave-room production at low cost. E. F. Houghton & Co., Philadelphia, Pa.

367. Rayon Oils—Leaflet describing three Houghton products used for throwing rayon filling yarns for weaving, as softeners in gelatin and similar solutions used for sizing and as softening oils for yarns, knitted and woven fabrics. E. F. Houghton & Co., Philadelphia, Pa.

368. Surfax W.O.—Leaflet describing a new surface-active chemical which possesses unusual wetting out and softening properties. E. F. Houghton and Company, Philadelphia, Pa.

369. Lunkenheimer Catalog 78—136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the thermo-dynamic properties of steam, and a table of shipping weights. The Lunkenheimer Co., Cincinnati, Ohio.

370. Notes on Exsize—Attractive new booklet describing the use of Exsize for desizing fabrics. Included is a review of general sizing and finishing and a flow chart showing the cotton and rayon finishing processes. Pabst Sales Company, 221 North LaSalle St., Chicago, Ill.

371. Aluminum in the Chemical Industry—Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses. Aluminum Company of America, Pittsburgh, Pa.

372. Stewart Fences—Illustrated catalog which is a complete text on the subject of fence for industrial uses. Stewart Iron Works Company, Inc., Covington, Kentucky.

373. The Bowen Spinner's Record Book—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data. U. S. Ring Traveler Company, Providence, R. I.

374. Fidelity Spooling Machines—Illustrated booklet describing the Fidelity Spooling Machine and outlining its many applications in the textile industry. Fidelity Machine Company, Philadelphia, Pa.

376. Leather Booklet No. 202—Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Pickers, Harness Straps, Lug Straps, Bumper Straps, etc. Also describes BONDARON Special Tanned Solid Round Leather Belting, Flat Belting and Standard Oak Tanned variety of Leather Belting. Chas. Bond Co., Philadelphia, Pa.

377. The Morton System—Illustrated literature describing the Morton improved double circulating raw stock dyeing and bleaching machine, the Morton horizontal revolving beam and package dyeing machine and beam bleaching machine, the Morton vertical package and roving dyeing machine. Morton Machine Works, Columbus, Ga.

378. The Victor Circle-D Traveler—Pamphlet describing this important advance in traveler design. Victor Ring Traveler Company, Povidence, R. I.

379. Tensometer—Leaflet describing the Tensometer—the new handy device for testing the tension in warping, winding and quilling. Sipp-Eastwood Corp., Paterson, N. J.

380. Ruler and Conversion Table—converting decimals of inch to millimeters or vice versa. Useful to knitting mills. Thomas & Skinner Steel Products Co., Indianapolis, Ind.

382. Warp Sizer for Spun Rayon—12 page booklet illustrating latest methods in sizing rayon staple. Charles B. Johnson Mach. Works, Paterson, N. J.

385. Sewing Machines—Illustrated technical booklets on high speed lock-stitch sewing machines for all types of work. Singer Sewing Machine Co., 149 Broadway, New York City.

388. Key Products for Textile Industry—22 page leaflet describing textile specialties used in dyeing, bleaching, and finishing as applied to Southern textile industry from Southern plants of American Cyanamid & Chemical Corp., 822 West Morehead St., Charlotte, N. C.

389. Fibre Conditioning with Texspray Compound—30 page booklet on treating of cotton or cut staple fibers with Texspray Compound including the advantages and development of fiber conditioning. The Texas Co., 135 E. 42nd St., New York City.

390. Yarn Conditioning and Twist-Setting—Tonesol booklet on new conditioning agent for textile yarns. Burkart-Schier Chemical Company, Chattanooga, Tennessee.

391. Repair Parts for Textile Machinery—36 page booklet and catalog on replacement parts for opening, picking, carding, spinning and twisting machinery. Henderson Foundry & Machine Works, Hampton, Ga.

392. The Mapro Series—34 page book describing the use of detergents in general textile mill work. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, New Jersey.

393. The Onyxsans—24 page book describing the application of cation active permanent softeners in textile processing and finishing plants. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

394. Vat Dye Labels—Booklet on labeling for textile and apparel fields for both woven and knitted goods. Jackmeyer Label Corp., 62 West 14th St., New York City.

395. SKF Industries Spherical Roller Bearings—36 page catalog on bearing applications and selection, also time saving computations. SKF Industries, Inc., Philadelphia, Pa.

396. The Textile Application of Metasol (Calgon)—handbook with detail information covering the use of Metasol in Scouring, Bleaching, Dyeing and Finishing. Burkart-Schier Chemical Co., Chestnut St., Chattanooga, Tenn.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the November 1940 issue of COTTON.

(*Fill in here numbers you select from both pages*).....

.....

Name .....

Firm Name ..... Position.....

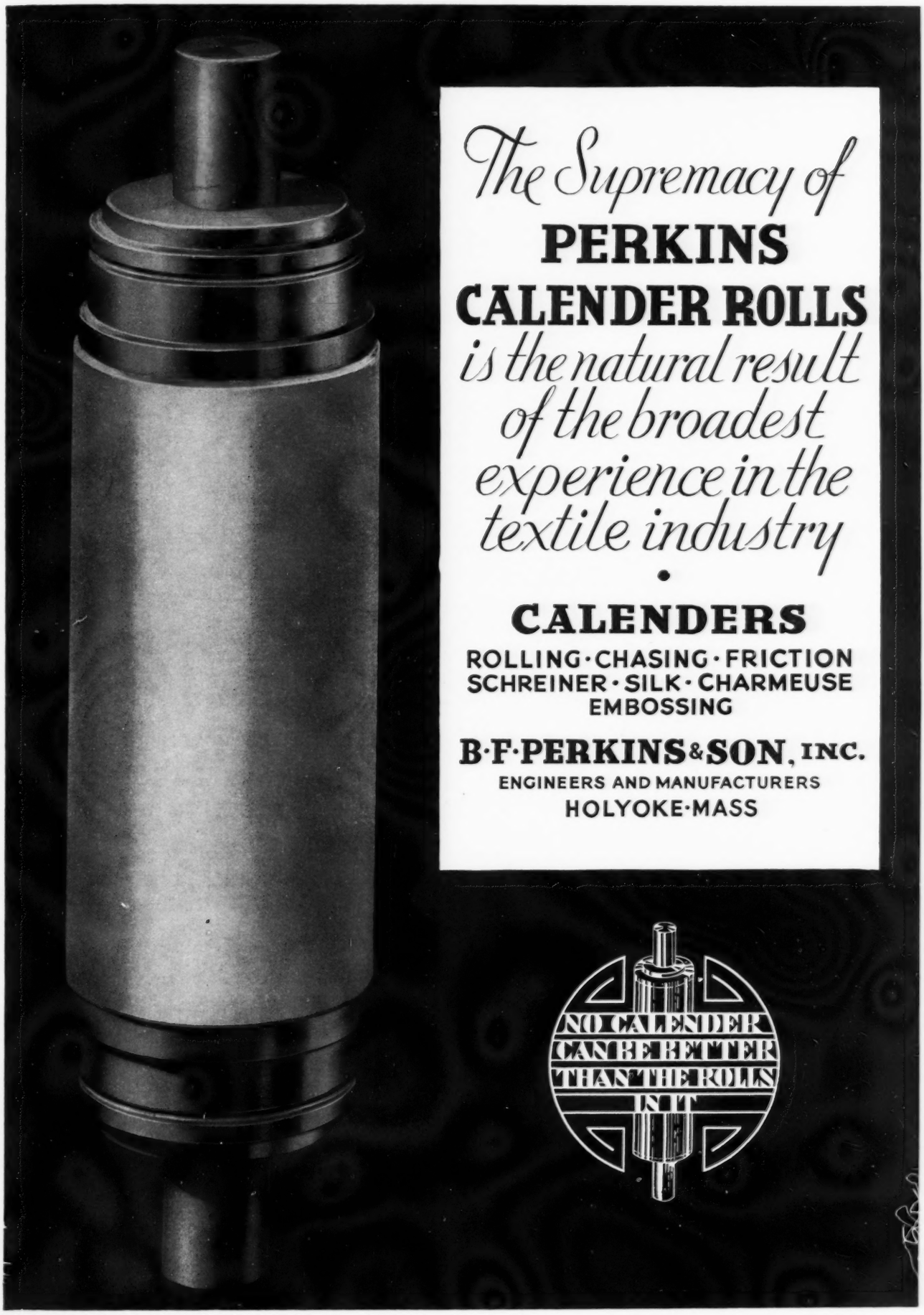
Street .....

City and State .....

List Items You Want and Tear Out and Mail Coupon Now!

●

Please be sure to fill in your Firm's Name and your Position on the Coupon. This service cannot be extended to you unless this information is furnished.


The Supremacy of
PERKINS
CALENDER ROLLS
is the natural result
of the broadest
experience in the
textile industry
CALENDERS
ROLLING · CHASING · FRICTION
SCHREINER · SILK · CHARMEUSE
EMBOSSING
B·F·PERKINS & SON, INC.
ENGINEERS AND MANUFACTURERS
HOLYOKE·MASS
NO CALENDER
CAN BE BETTER
THAN THE ROLLS
IN IT

You can't tell the difference —*until you start to play it!*

It is one thing to make a copy of a quality product; it is another to make a duplicate that will equal the original in *performance.*

You can have a part made for a Scott & Williams machine that will look exactly like the original. But the slightest variation in the dimension or in the internal structure of the metal may render it unfit for the purpose for which it is used. It may cost you far beyond whatever price you paid for it—in decreased knitting efficiency, more rejects, short life operation—and the ultimate replacement with a genuine part.

Most mills have found that it pays in the long run to buy S & W parts for S & W machines. They know that all S & W parts are duplicates—made with the same materials, by the same methods, with the same equipment that made the parts in the original machine. They know, too, that S & W facilities, skill in production and knowledge of knitting machine operation are unique—the result of 75 years of experience. And they know that Scott & Williams is responsible for the efficient operation of every part it makes.

The Scott & Williams stock of parts is complete—you can obtain any part for any machine at any time without delay. Most orders can be shipped the same day they are received. Airmail, phone, telegraph or teletype your rush orders. Teletype is free from our New York and High Point offices.

SCOTT & WILLIAMS *Incorporated*

40 WORTH STREET, NEW YORK, N. Y.

Established 1865

"THIS IS THE SCOTT & WILLIAMS MACHINE AGE"

KNITTING SECTION

Some Methods Used in Joining

Full-Fashioned Hosiery Machines

WITH more than half of the full-fashioned hosiery industry's estimated 16,000 knitting machines ten years old, or older, owners of antiquated equipment are today finding themselves hard pressed to meet the demands of the present highly competitive hosiery market. The question, therefore, before owners of outmoded knitting machines is one of necessity: "How can we make our obsolete equipment up-to-date and competitive?"

That the problem is a grave one for some mills there is but little doubt, for during recent years hundreds of hosiery machines have been moved out of high-cost metropolitan manufacturing centers to spots more geographically favorable to hosiery making. Today, scores of small mills have sprung up in the hinterlands; mills which can be operated at a cost advantage that cannot be duplicated by manufacturers operating the same type of equipment in less favorable localities. Coupled to this exodus of machinery out into small mills, many new mills have come into existence, mills which have incorporated new high-speed equipment, and this helps to further complicate the situation for less progressive operators. Knowing full well that unless their aged machinery can be made competitive they will find themselves out of the hosiery picture, metropolitan mill owners are at the moment trying various methods of revamping their machinery into a state of higher productivity. A few of these methods of machine rehabilitation will be outlined in the following paragraphs.

Experience in Joining Machines

One of the first-tried methods of knitting machine rehabilitation was an effort to make three 24-section leggers from four 18-section leggers. Although the plan in itself seems sound, it must be discarded as impractical because of the cost involved. Complete cost figures are not available at this time but in round numbers the cost amounted to something like $4000 per set of machines for this particular project. Add to this amount the cost of reneedling and resinkering which is necessary if the machines are to be operated at the higher speeds, and you have a general idea of the total cost involved. Considerable time was also lost in getting these machines to operate satisfactorily. To date, no mills have accepted this method of rehabilitation except as an experimental venture.

Another mill, operating 51-gauge machines, has attempted to join two such units, making a 40-section legger out of two 20-section leggers. To complete this project, leggers had to be disassembled and rebuilt side by side which involved a considerable element of time. On this particular set-up, automatic welt turners were installed, worn machine parts replaced, shaftings coupled together, and motors synchronized. This mill has at present four such units operating satisfactorily with three knitters working on each double job (80 sections) and a boy topper to top press-offs onto transfer bars which are used as needed on the machines.

Production on two of these 40 section units is figured to be 180 dozen per week and the piece work rate is set according to this figure, though the machines have not as yet been operated at capacity production. Rate of payment to the knitters is an innovation in the knitting trade as the three knitters in each aisle pool the week's production and each get paid one-third of the total wages earned.

By Caswell Clifton

Still another mill has been experimenting with a 30-section legger constructed from one 20-section machine and ten sections from another 20-section machine built onto it. This method of rehabilitation would produce two 30-section machines from three 20-section machines. Many months were consumed in getting one of these machines operating to any degree of satisfaction and it is very doubtful whether the mill in question will continue with the experiment which it has found very costly.

Some of the technical points involved in creating this 30-section legger are as follows:

First, one legging machine was disassembled and ten of the sections erected at one end of another 20-section machine. Shafts coupled and pinned, slur-cock slide joined by a steel plate which is bolted and pinned. A new 2-hp. variable speed motor installed to carry the extra load. Four heavy balancing cams distributed at different points on the camshaft to help eliminate twist in the shaft caused by starting and stopping the machine. Heavy double springs attached to catch bar, needle bar, press and narrowing rollers to keep rollers from jumping away from cams during high-speed operation. Two slackers on the regulator shaft, same being synchronized so that they work together. Picot attachment in three sections instead of the regular two sections. Narrowing rods joined by overlapping and the whole narrowing worked off one rack. Three rocking cams located near either end and in the center of the ma-

chine. Shock absorbers put on the frictions, and coulier motion arms braced to withstand the extra strain. Carrier rods joined by overlapping and worked off end racks.

In order to make a finer looking stocking on this 42-gauge machine, the machine was reneedled with needles having 48-gauge head and shank down to the needle bar, the portion of the shank going into the needle bar being made to fit the 42-gauge slot. This means that 48-gauge needles were working between 42-gauge knock-over bits and sinkers. The needles were constructed so as to make a tighter fabric than possible on the 42-gauge needles. After only a few months of running however, many needles had already worn sharp along the beard grooves, which caused considerable cutting of fabric.

Operating at 64 courses per minute, one knitter was able to produce seven to eight dozen per day on this 30-section job, but considerable time was lost each set turning welts by hand as the 42-gauge welt hooks did not seem to work very well with the 48-gauge needle heads. Considerable time was also lost in picking up drop stitches dropped by the picot points, and due to carrying excess weight to guarantee proper take-off of fabric, the machine had to be operated exceedingly slow in the heel narrowing.

All in all, this seems to be one of the most costly of the rehabilitation experiments, and one that cannot be termed practical.

The most likely looking rehabilitation plan at the moment seems to be one in which two 20-section leggers are to be joined together for a cost of something like $100. This plan simply involves placing one legger upon rollers, moving it across the aisle beside another legger, coupling up the shafts, synchronizing the motors, and it is ready to operate. Many of the larger mills are looking with favor upon this plan because their machines are so situated in rows as to make them easily movable.

It is further claimed that this plan will put the larger mills on a competitive basis with smaller mills as joining their 20-section machines together will considerably reduce the labor cost per dozen. Rate of payment will be made by pooling the production of a pair of these leggers between three knitters, the knitters to receive equivalent to a 26-section machine wage rate, which would be quite a reduction from the present average wage scale for 20-section leggers.

As at least three large mills have started to join their machines in this manner, the experiment will be watched with keen interest by manufacturers who are in a position to do likewise, for not only must man work the machines, but the machines must be made to work for the best interests of man.

A Visit to Bob's Mill

SOME FEW years ago, my friend, Bob Hightower, became interested in the organization of a small hosiery mill for the manufacture of half-hose for men. Bob was recognized in his section as an all-around good hosiery mill man. He designed the new mill and virtually selected all the machinery and had it arranged according to his own ideas. So, when the mill began operations, he was appointed production manager or super as the mill help called him.

Bob and I started in the mill about the same time; that was a long time ago. We knitted on the same section, we chummed together, played cards together, went courting together, and I might add—occasionally took a drink together—but don't say anything about that.

As the years went by, Bob married and we did not see so much of each other. I left the old home town but kept in touch with him by an occasional letter. Soon after his new mill started up, he wrote me telling what a nifty little mill he was running and inviting me to stop by and see it next time I came over his way.

One sultry summer day, while on my vacation, I was returning from a few days' fishing trip; I decided to drive some 20 miles out of my way to see Bob and his nifty little mill. It was a one-story building with monitor roof, wide and rather short, constructed of slow burning material, brick with steel sash; the front end was weather-boarded for future expansion. It appeared comparatively plain on the outside, no fancy para-walls except a fire-wall that separated the building into two compartments.

As I came closer, I noticed the windows were all closed and I could see no smoke coming from the stack, yet there were 30 or 40 automobiles parked in front. "Surely, if there were anybody in that mill this hot day those windows would be open," I thought.

Parking my car, I walked to the 3-foot door, on which was painted in black letters *Office*. Bob ushered me into his office and after talking for awhile I expressed a desire to see his plant.

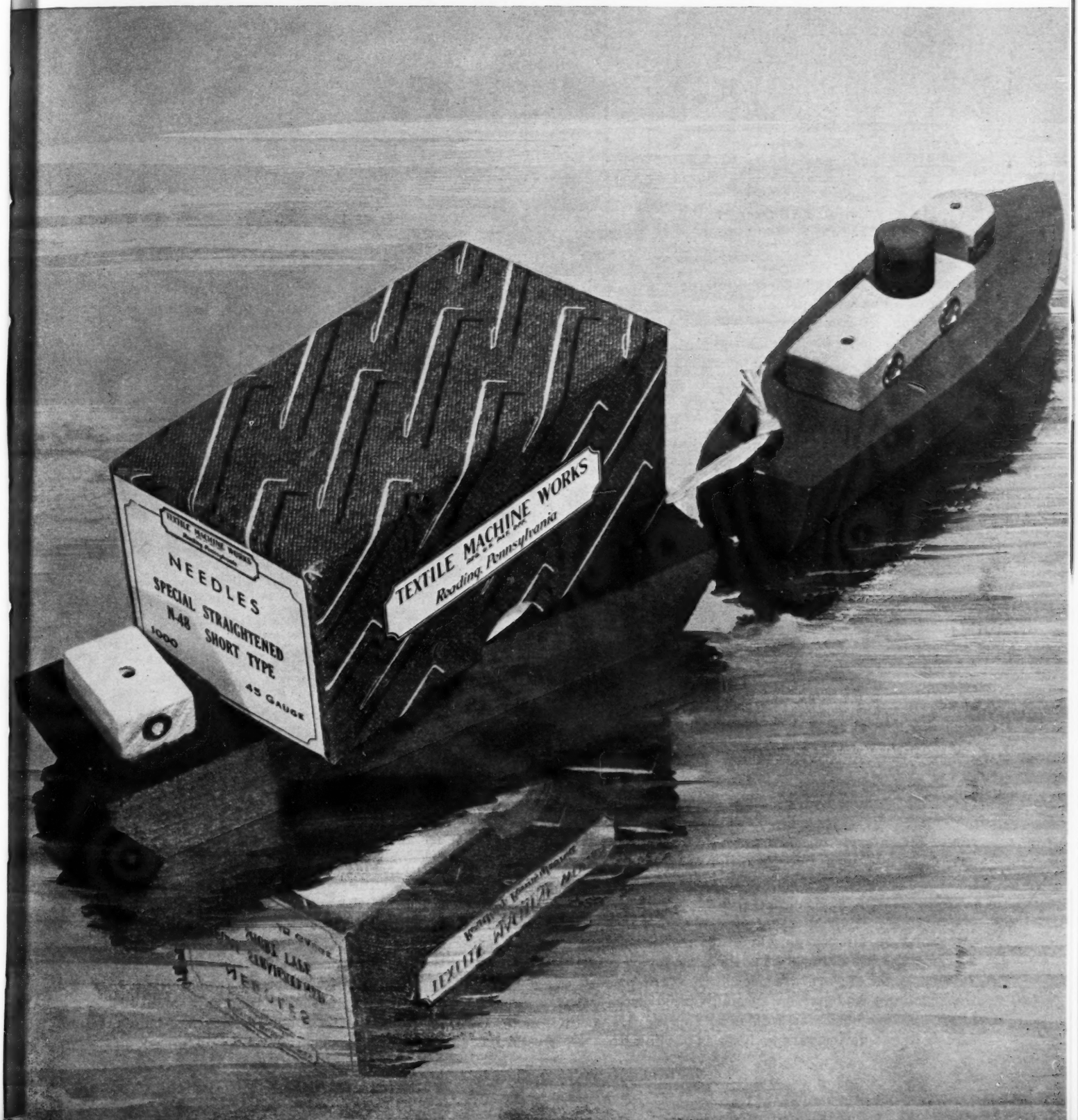
Bob's office was also a store room. There were steel cabinets for needles and other small knitting machine parts, steel shelves for miscellaneous supplies —it looked like a miniature hardware store, and to get anything out of there one had to go through almost the same procedure.

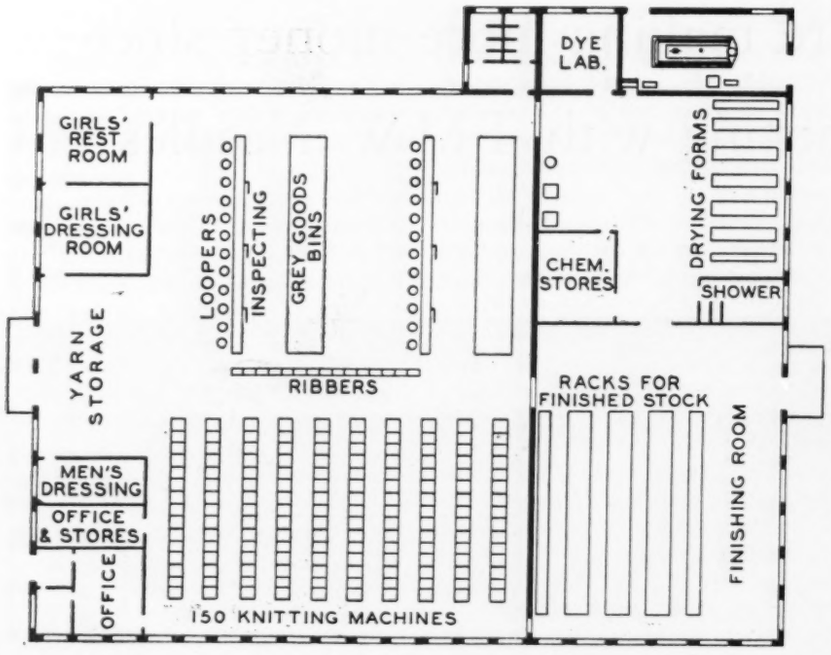
Heaters Used as Coolers

As we stepped into the knitting room I noticed how cool and comfortable it was. The cool air was coming from what I had known as unit heaters, but they were evidently unit coolers here. I had run the fans on my unit heaters in the summer in an attempt to cool the room but they only circulated the warm air; here they were really cooling the air. I wondered how he did it. As I turned to Bob he had an amused expectant expression on his face as if he were anticipating my question.

"That's a little stunt I rigged up myself, Hank," he said with a merry twinkle in his eyes. "The atmosphere in the room is cooled by the expansion of com-

"... and we're making more money since we began knitting with TMW Needles."





Layout of Machinery

There were 150 knitting machines of the Banner split-foot type, equipped for reverse plaiting and the wrap. The machines were arranged in 5 batteries crosswise of the room to get the benefit of the light in the work alleys. The alleys were wide enough to accommodate the toppers' work tables and the knitters' yarn storage racks.

"Bob, I notice you have a man on every line (15 machines) doing the knitting and two girls topping for each knitter; you like that better than topping and knitting?"

"Oh, yes, toppers are often hard to get and it takes a long time to make one moreover being a skilled operative, they are my highest paid help—except the loopers. By giving their whole time to topping I don't have to have so many as I otherwise would. Again, there are not so many knitters handling the machines; that makes it easier on the fixer and therefore he can keep up his section better."

"I see you have girls inspecting at the machines. How many can each girl take care of?"

"Each girl examines, turns and counts from 30 machines, or for two knitters. Her job is, as you know, to see that the goods are being knitted properly; if she finds anything wrong with one she stops the machine and lays the faulty sock on the bedplate; the knitter looks at it and if it is due to a bad needle, or to other mechanical failure, he hangs the sock on the yarn stand so that the fixer can see it."

The line of ribbers were placed just in front of the knitting machines and at right angles to them, near the center of the room. This made it possible for the ribber tender to deliver the tops to all the toppers with the fewest steps. In spite of the fact that the ribbers were in the center of the room, they were well lighted from the monitor windows.

Coming to the loopers, I was very much impressed with the unique arrangement. Instead of each looper packing her work into a truck or bag as she finished it, to be inspected later when the gray goods inspector got to it, there was one inspector working in unison with 4 loopers. There was no intermediate storing between looper and inspector; thus, saving space and catching bad looping before it got too far.

There were two lines of loopers, 12 in each line, on the north side of the room, and like the knitting machines, they were lined at right angles to the wall. The inspection forms were on the same table with the loopers, on the opposite side, and so spaced that each inspector could take the work directly from 4 loopers.

As the loopers and inspectors took care of a 16-hour knitting production in 8 hours, there was ample storage space for the goods in process just back of

pressed air at atmospheric temperature in the coils of the unit. The same principle is used as that in refrigeration with ammonia. The only difference is that I use compressed air and expand it locally. In the winter we circulate steam through them in the usual way. So you see they do work the year around."

"Isn't that rather expensive, Bob, considering the power it takes to run the compressor?"

"No, not the way I work it—I'll explain that to you later when we get to the boiler room. How does the whitewash on the walls and ceiling look to you?"

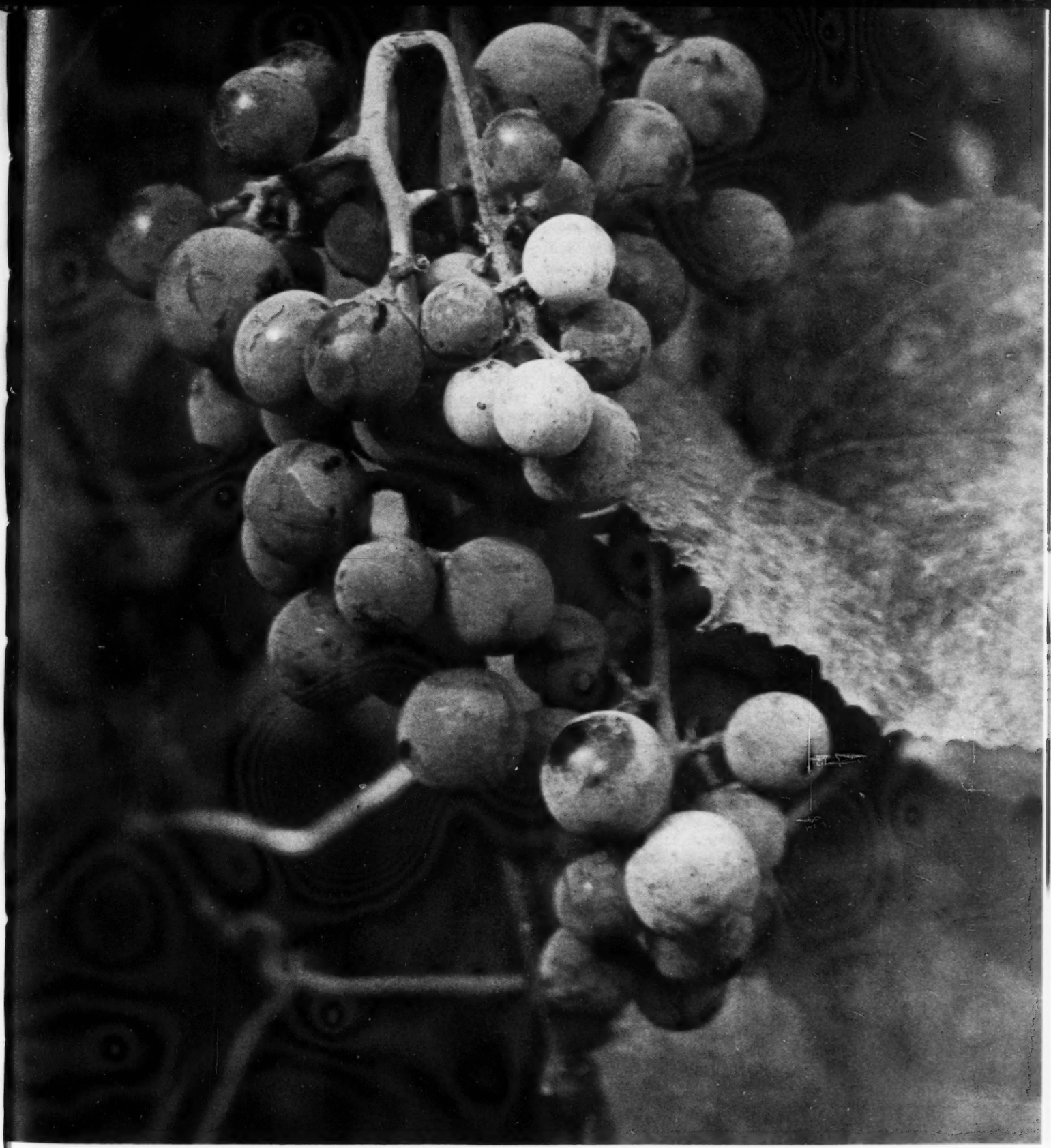
"Is that whitewash? It looks as good as lead and oil so far as I can see."

"I have always been strong for the regular cold-water paints like whitewash for mill interiors. Fire insurance people say a paint of the whitewash order tends to retard the progress of fire. You remember, years ago we used it altogether for inside jobs, using an animal glue for a binder. This glue was not effective in damp weather and soon the whitewash would flake and rub off, so the glue gave way to lead and oil. Since the war a new glue has been developed called casein, which is water-resistant, and with this used as a binder the cold-water paint dries smooth and can be rubbed with a damp rag."

"I see; you saved the mill quite a lot of money by using the cold-water paint, which is satisfactory as far as the interior is concerned, and at the same time gave your mill some fire protection."

"That's the idea exactly."

"Now," Bob continued, "you see the yarn is received at the front and the cones are unpacked right away, put on pin-boards which are in turn placed in a frame truck holding 6 of these pin-boards. As the various kinds of yarn are needed they are trucked to the machines and put on specially constructed racks located conveniently for knitters. You see, Hank, the idea is to handle the yarn as little as possible."



"Sour Grapes never make Sweet wine"

OLD SAYING

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary twenty-section forty-two gauge machine . . . *And remember: Money invested in modern machinery not only pays big dividends of itself but also serves as insurance for your total investment.*

TEXTILE MACHINE WORKS • READING, PA.

each looper line. Back of the inspectors were large steel shelves to store several days' run of finished gray goods, which were packed in canvas bags. There they remained until called for by the dyehouse.

The dyeing and finishing department, boiler room, and dye laboratory—the latter being on the north side —were divided from the knitting department by a firewall with sliding fire-proof doors.

When we stepped into the dyehouse it appeared to me to be unusually small, but it was clean and equipped with up-to-date machinery—even the trucks that were not in use were lined up in order. There were two rotary dyeing machines, solid stainless steel, of 100-pounds capacity each. They were both fitted up with recording thermometers, automatic controllers, and dummy clocks. 3 lines of pipe ran to the dyeing machines, one steam, one hot water, and one cold water. All steam and hot water pipes were covered with asbestos. On the opposite side of the dyehouse next to the windows were 12 sets of drying forms; the boarders were working in apparent comfort with the windows closed, thanks to Bob's unit coolers.

One interesting thing about the boarders was that they worked in squads of 3, instead of independently as I always had seen them do. I asked Bob what advantage that was.

"Three men working that way can do as much as four working the ordinary way."

"How many dozen can the 3 men average in 8 hours?"

"400 dozen easy."

I admitted 400 dozen would be a pretty good average for 4 boarders in an 8-hour day at my place.

"Here's something every dyehouse should have, Hank." He beckoned me to a small compartment in a corner of the room.

"A shower bath and dressing room; the boys certainly make good use of it. As long as there is steam in the boiler they have plenty of hot water."

"Yes, that's nice—speaking of water, Bob—do you use raw water for dyeing?"

"Oh, no, we condition and heat all water used in dyeing and in the boiler as we consume it. I'll explain it to you when we get to the boiler room. Let me show you our laboratory."

The Laboratory

The lab was in a small room, possibly 20 feet square, protected from the boiler room and the dyehouse by fire walls. It was well lighted by two large windows in the north side. There were small dyeing vessels made of stainless steel, used for dyeing samples and for experimental work. There was a work table for weighing and mixing chemicals. Along the wall were numerous shelves which held small quantities of various chemicals and mixtures of liquors—however, they were not fit to drink.

The man in charge was busy washing out some fabric with soap and warm water; obviously testing it for fastness. He seemed to take quite an interest in his work. I learned he was a college man, having taken a special course in textile chemistry; the mill allowed him a small sum for research work—I later learned that the product of this mill was noted for its fastness to laundering.

"Let's go to the boiler room," Bob was saying as he tapped the end of a cigarette on his nickel case.

"So, that's why you've mentioned the boiler room so often; you wanted to smoke."

The Boiler Room

Bob responded with a sheepish grin as we left for the boiler room. "This compresses the air for our cooling system," he said, pointing to a two-stage compressor similar to those found in large filling stations. "As you can see, the suction pipe is connected to the supply pipe on the heating line; the smaller pipe leading from the air-storage tank is connected to the return-condensate pipe. That makes the flow of air when cooling, just opposite to the flow of steam when heating."

"Why must the flow of air and steam be opposite, Bob?"

"Steam requires more space than water—12 times as much—so you see the pipe through which the steam passes to the heaters must be much larger than the one through which the condensed steam returns. On the other hand, compressed air requires less space and a smaller pipe; when it expands in the coils of the unit it takes more space, hence, it returns through the larger pipe. Of course, there must be a by-pass at each unit so the air can get by the trap, also the necessary valves for cutting it out. The temperature is controlled locally by a valve; the more air is allowed to expand the more heat it will take out of the room."

Bob led me towards the front of the boiler room where a duplex direct-acting steam pump was drawing water from an open feed-water heater. Pointing to a self-acting valve on the steam pipe leading to the pump, he said, "That valve controls the hot soft water supply to the dyehouse and boiler. The coil spring you see on the valve stem tends to keep the valve open and the pump running; it is closed by hydraulic pressure from the discharge end; as long as all the valves on this line (pointing to the water pipe from the pump) are closed, the pump is idle; open one, you reduce the pressure, and the pump starts immediately; open all of them and the pump runs full speed. So that's how we heat and purify our water as needed."

"Would you mind explaining briefly how the open-heater heats and purifies the water?"

Water Softening Arrangement

"Gladly; water from the city main enters through the pipe you see at the top—the amount is controlled by a float inside—and flows in a thin sheet over a series of trays. The exhaust steam from the pump enters through the oil separator, and rising among the trays, heats the water. The gases held in solution in the water are freed by the heat and escape in the air; while the mineral impurities in solution, which cause trouble in the boiler and the dyebath, are precipitated by the heat and are deposited on the trays where they can be removed. In the bottom part a layer of coke filters any suspended impurities, and a strainer on the suction pipe keeps any of the coke from getting into the pump."

"Bob, you are quite an inventor to think of all these arrangements."

"They're not inventions, Hank, just co-ordination of scientific facts. They've all been known for years."

While we were talking the fireman came in to "coal up". Instead of spreading the coal heavily all over the grates, as I did when I fired years ago, he pushed the coals to the rear of the fire-box and shoveled fresh coal just inside the furnace doors.

Bob observed my amazement and explained, "That's the coking method; the idea is to prevent so much smoke. Clouds of smoke pouring out a stack mean you are not getting all you might out of the coal. Smoke means sooty flues, and that means more coal to make steam."

"That's why I didn't see any smoke coming from the stack as I drove in."

"No doubt. Let's go to the finishing room. You know, Hank, at most mills the pairers inspect and pair at the same time. I never fancied that way; trying to do two jobs at one time is not as satisfactory as specializing on one. As you can see, I have three girls working together on each table. The two pairers take the work direct from the inspector; there is no intermediate piling or storing of the goods; that saves time and space; moreover, they do the work better that way and get along faster. You know a race horse, when run with 3 or 4 other fast horses, will do his mile in faster time than he could do it alone. The same thing works out with men and women in the hosiery mill."

Bob looked at his watch, "I'll have to get back to the office and finish my work. You must spend the night with me; we have a lot to talk about."

I accepted the invitation because there was a lot more I wanted to know about Bob's mill.

Finishing Circular Knit Goods

(*Article 3: The Peroxide Bleach*)

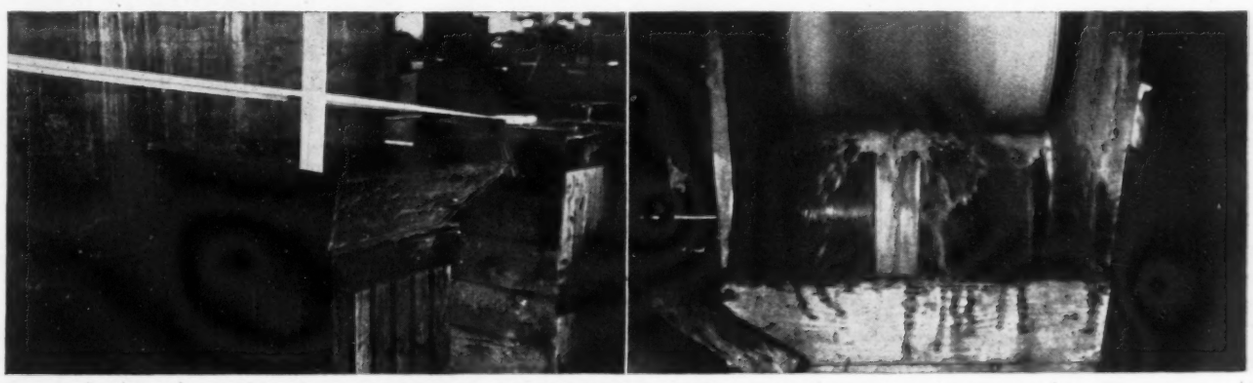
• This is the third in a series of articles on the finishing of circular knit goods, as prepared by a practical mill man. The first installment, appearing in the August issue, covered the quick bleaching of fabrics on the open tub, the second article, in the September issue, took up the bleach by kier boil and chlorine, while this installment covers the peroxide bleach . . . . . .

THERE are certain types of goods on which the feel is very important. A good soft "hand" cannot be obtained on chlorine bleached knit goods, but can be obtained by bleaching with peroxide. Needless to say, peroxide bleaching adds more to the cost of the goods than does chlorine bleaching. For this reason only certain goods may be bleached in this manner. The type goods more often bleached in this manner is lightweight goods from which athletic undershirts are made. On these goods the feel is so important that the cost of peroxide bleaching is not prohibitive.

The process to be described is the one-step process—boiling out and bleaching in the same bath. A two-step process gives no better results in any respect and the extra time and materials for the two-step process add to the cost.

Preparing the Goods

The goods are fixed for this process in much the same way as are heavy goods for chlorine bleaching. The ends of successive rolls are sewed together and the goods are piled in a large box or boxes. This makes one continuous piece of the entire kier of goods and allows continuous running. In this case the goods of the proper weight and style for peroxide bleaching are taken from the knitting machines and put in small boxes. Rolling the pieces into rolls



Two views of J-box in which knit goods are being wet-out before loaded into the kier. Left, goods dropping into the box and coming from the squeeze rollers of the box. Right, goods passing through squeeze rollers of the box.

is unnecessary for the goods are bleached regularly and are not stored until after bleaching. The goods are pulled from the knitting room to the bleachery through a series of "pot-eyes", then sewed and piled on boxes.

Care of the Kier

Peroxide bleaching can be successfully done in a regular kier and other bleaching equipment. The kier, however, must be kept well painted with cement to prevent the goods coming in contact with the iron of the kier and spots of rust resulting, especially if the goods are to remain in the kier as long as 15 hours after bleaching. This is not necessary for a kier in which caustic boiling is done, for the caustic itself will coat the kier.

The goods are pulled from the box into a J-box containing a penetrant and then piled in the kier with an automatic piler. The goods are thoroughly wet out in the J-box before going into the kier. As has been brought out before, this is the quickest and by far the most efficient way of wetting goods to be loaded into the kier — one strand at the time. Another point is that no more time is required in wetting this way than would be taken in loading the goods dry. Pine oil is a satisfactory penetrant to use for this, but must be mixed with a sulphonated oil for a carrier. This wetting bath is run at about 112 degrees F. and though this may not seem hot enough, a thorough job of wetting results with no danger of affecting the fuel. The use of the automatic piler is very necessary to successful peroxide bleaching. One of the primary requirements for good, even work in bleaching is an evenly loaded kier, and a regular, even circulation throughout. This is desirable in any case, but becomes of even greater importance in peroxide bleaching.

Bleaching Operation

The charge for kier bleaching with peroxide no doubt varies in each different plant. There are many things to consider in making up a charge—the most important being the results desired and the cost. The charge to be discussed will give exceptionally good results both as to feel and shade. The cost would vary from plant to plant and, too, is an individual matter so it will not be discussed.

The charge is made up in the tank attached to the kier. To begin with, a small amount of water (much less than the total charge will be) is run into the tank. The compounds are added in the order listed. The percentages are based on the dry weight of the goods.

.2% Soda ash
.25% Tri sodium phosphate
.5% Sodium peroxide
3.00% Sodium silicate
3.00% 100 volume hydrogen peroxide
.5% Penetrant

Soda ash is used for its alkalinity, cleansing action, and because as an alkali it is not so strong in action as is caustic. Tri-sodium phosphate is added for its action as a detergent and also for water softening. The feel of the goods is also improved by the phosphate. The sodium peroxide serves two purposes also. On dissolving, it gives NaOH besides giving up oxygen to the solution.

Sodium silicate is added for several reasons, the most important being that of stabilizing the solution. In a solution made alkaline with only soda ash or caustic the oxygen would be given off very rapidly and this is not good. It is necessary for the oxygen to be given up evenly over a period of about 6-8 hours to get the best results and to prevent tendering the goods. Sodium silicate does just this in the solution. There are other stabilizing agents and some of them are reputed to be equal to silicate but as yet the compounds are being tried only experimentally. Silicate is alkaline, is a guard against tendering caused by iron, and has detergent action. The action of the peroxide is most important, of course, because this is the chief source of the oxygen which does the bleaching.

The penetrant is added to increase the evenness of the work through better penetration. The charge should be made up to just enough to get good circulation. This amount will vary, of course, depending on the type goods—how rapidly or slowly water will run through.

The foregoing charge will give good results in most cases. Where there is a supply of unusually good water available good results may be obtained with a reduced charge. An excess should be used when bleaching a small amount of goods because a greater ratio of water to goods is necessary.

The charge is run in at the top of the kier and circulated for about 30 minutes before the steam is turned into the heater. This assures that all the goods are saturated with the charge when the liberation of oxygen begins. Running the charge in at the top of the kier is preferred to running it in at the bottom for the latter method tends to cause the goods to float and will often cause tangling. This charge should be run at 180 degrees F. for at least 6-8 hours depending on the speed of the liberation of oxygen. When the time is available 2-3 hours continued running at this temperature will greatly improve the shade. This is a common practice in most plants since bleaching is usually done at night and the goods removed the next morning. Little additional steam will be used in keeping the kier at 180 degrees F. for that length of time. This improvement in shade comes about because all the oxygen is not used in 6-8 hours.

Checking the Bleach Solution

As soon as the charge is run into the kier and has circulated a few minutes it should be checked for peroxide content and alkalinity. This is necessary for there may be more water in the goods than was allowed for and the charge may be too weak or too strong. This check is made in the following manner: A sample of the charge is taken from the kier. Ten cc. of the kier sample is added to 20 cc. of a 20 per cent solution of sulphuric acid. This mixture is then titrated to a faint permanent pink using a standardized solution of potassium permanganate (available for this express purpose). The number of cc. of permanganate used for this titration is equivalent to the number of quarts of 100 volume peroxide in each 100 gallons of the charge. The charge should contain about 2½-3 quarts peroxide per 100 gallons or should require 2½-3 cc. of permanganate to titrate.

This checking may be continued

throughout the entire time of bleaching if there is any doubt as to the results that are being obtained. If there is ne ' for stopping the process as soon as possible, the charge may be checked after about 6 hours running to determine whether or not there is enough strength remaining to make further running worthwhile.

When the charge has as little as one quart per 100 gallons it will not do a lot more bleaching though if time is available continued running will be helpful.

When the charge is run out of the kier the goods are washed immediately with hot water. The remaining chemicals and impurities are more soluble in hot water than in cold and should be removed completely before coming in contact with cold water as this would set some of them in the goods and increase the harshness.

The goods are pulled from the kier through a pair of squeeze rollers and piled into small boxes. From these boxes the goods are loaded onto the reel tub or slack washer to be finished.

Washing

All the further cleansing necessary can be accomplished by washing with water at about 140 degrees F. Offhand it seems that this could be easily done in the kier, but such is not true. The physical agitation of the washer is necessary to do a good job of cleaning. If the goods are offshade on coming from the kier a light soaping will greatly improve the shade and will not cause any great change in the feel of the goods.

Softening

Although the foregoing procedure will leave the goods in an unusually soft condition, it is often desirable to improve this condition. This brings on the addition of a softening compound. Many sulphonated oils, soaps, and other similar products have been tried for this purpose, but we have found that the cation active type softeners, which were only recently made available, give very satisfactory results.

The amount of softener to use will, of course, vary for different types of goods. This will have to be worked out on each type by trial. For lightweight goods as little as .4 per cent-.5 per cent is the optimum amount to use. Little more can be added to throw light on the subject of how much to use for that will vary under different conditions of application and water.

Washer with knit goods getting one round through it before going to the J-box to be wet out. The goods enter from above the squeeze rollers shown, go down behind the rollers under the bottom roller of the washer and then through the squeeze rollers.

After the blueing is added and the goods run enough to get the blueing on level, the softener is added and the steam valve opened. The softener must be boiled-up in a bucket of water before being added to the tub. Getting the compound in solution is very important and may often give trouble, but it must be done for without solution there are no ions. The pH of the resulting mixture of water and softener should be slightly on the acid side. This will be taken care of by the pH of the softener unless the water used is too far on the alkaline side.

There may also occur some offshades as a result of using the wrong blue in connection with the softener and water. Direct-dye blues work better with different cationic softeners than do acid-dye blues, though different water conditions may prove this to be untrue. More care must be exercised in the use of direct-dye blues, however, for the heating necessary for the softener causes the blue to exhaust from the bath and a shade that is too blue may easily result.

When the temperature of the bath reaches 130 degrees, or as hot as can be handled in unloading, the steam is turned off and the goods run on for about ten minutes and then unloaded. Extracting and drying are all that remains to be done to the goods.

General

The feel of the goods has been mentioned quite often along with some precautions to insure maximum softness. High temperatures and strongly alkaline solutions are to be avoided to prevent the removal of all the natural oils and waxes present in the goods. A certain amount of these must be left in the goods if the softness is retained. Were the goods to be dyed after bleaching these waxes and oils would be objectional because of reducing the absorbency of the goods. This is no matter for concern with white goods.

Colored flyings (from the yarn spinning mill) often show up in the goods after bleaching by this process. Also spots of colored chalk which is used in the spinning mill to identify yarn counts do not always bleach out. Quite often when these spots are present they are so weakened by the bleaching they are not noticeable after drying and nothing needs be done about them. If, however, the spots are very predominant and heavy enough to show up, a light chemic treatment after bleaching will remove the spots. The goods must be finished as are chlorine bleached goods if this method of removal is resorted to.

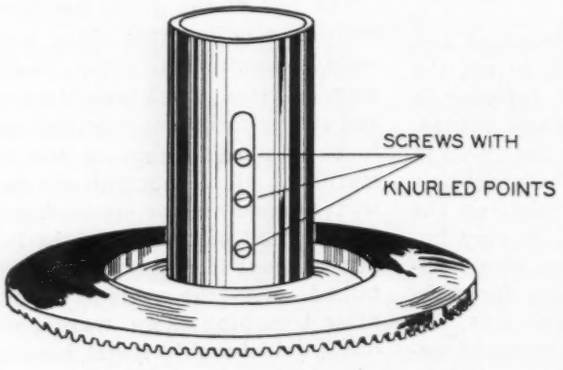
KNITTING KINKS

Keeping Spline Tight

EDITOR COTTON:

As most of us know, the cylinder of Scott & Williams machines like the K and H-H models, is raised or lowered to adjust the stitch. This makes it necessary to drive the cylinder indirectly; that is, instead of the bevel gear being cast integral with the cylinder, it has a sleeve that extends up inside of the cylinder. This sleeve drives the cylinder by a spline fitting into a slot, which allows the cylinder to be moved up or down independently. The splines are held in place by three screws—formerly two (see accompanying illustration). As long as these screws remain tight the cylinder is driven without lost motion, but when the work loose, as they often do after a while, there will be lost motion, an ugly noise and rapid wear during the reciprocating of the cylinder for heel and toe knitting.

Since the cylinder fits snugly over the sleeve extension, and the vertical movement of the cylinder



must be free as possible, the lubricating oil used here must be of higher viscosity than for other bearings so that it will penetrate to the farthermost crevice. This being the case, this light oil finds its way to the spline screws, and reduces their frictional resistance so they gradually work loose by the frequent reciprocation of the cylinder.

On the old model K and B-5 machines, when there were only two screws in a spline, this trouble was so frequent that some machine fixers welded the splines to the sleeves. This is not such a good idea, in my opinion because, nobody ever knows when a spline will have to be taken out and replaced.

Perhaps the best way to give screws enough stability to prevent them from being worked loose is to knurl the points. This can be done with a three-cornered file; the grooves filed on the end of the screws gives them adhesive power. Incidentally set-screws with machine-knurled points are on the market now.

CONTRIBUTOR No. 7105

Pulled Threads in Nylon Stockings

EDITOR COTTON:

Those of us that are running nylon in making full-fashioned hosiery have learned that pulled threads are one of our main troubles. In attempting to eliminate this defect throughout the plant, we have done something that may be of interest to other mills that are running nylon.

We purchased a quantity of muslin, had it dyed green and made covers for the toppers' stands and knitters' cabinets in the knitting room. On the machines covers have been placed over the needle bar to keep the nylon off of the rough places and even the footer hooks have been covered.

In the other departments, such as looping, seaming, and grey inspecting, we have covered the tables and legs with this material so that the nylon will have no chance of getting on the rough places.

Also, the inspectors wear cheap cotton gloves to prevent hangnails and rough hands from pulling the fabric.

This has been helpful in reducing the number of pulled threads in our nylon hosiery.

We have also heard about a canvas basket which holds 10 dozen nylon hose. It seems that this basket permits the hose to lie flat, which is helpful in handling, and the basket can be moved from one process to another. The basket, as I understand it, is especially designed for nylon hose and should prove helpful in preventing pull threads.

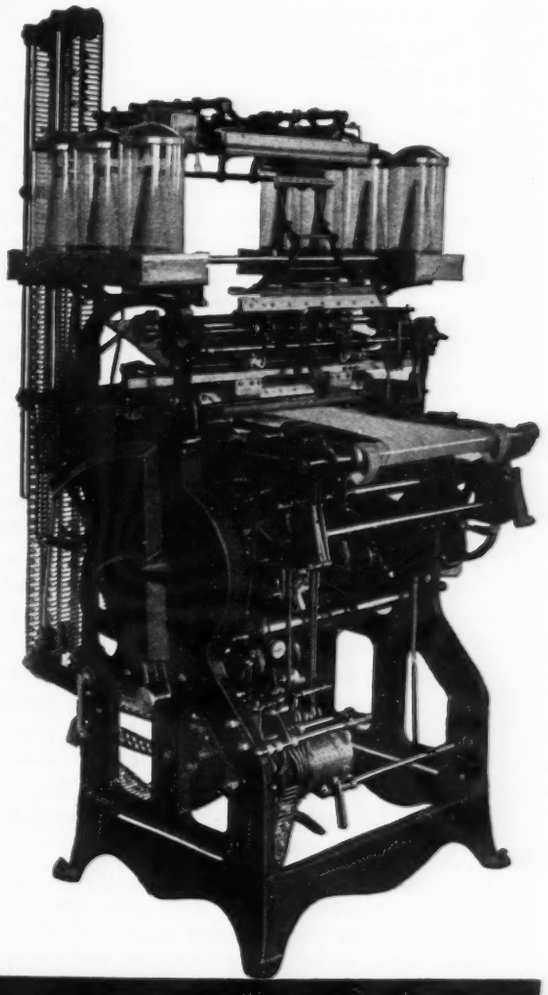
CONTRIBUTOR No. 7135

Care of Frictions

NEVER take a friction leather out unless it is giving trouble, or you think it has been in use long enough to have worn down to the rivets. Before putting in a new leather, always soak it in castor oil until the leather has absorbed all the oil it will hold. If a leather is soaked in castor oil before it is put in the friction, and a small amount of oil put on the friction rod once or twice a week, the leather will never dry out. The action of the friction rod sliding through the leather tends to work the oil into the leather and also to take out the surplus oil and the leather that wears off.

If you have to take a leather out and clean it, use coarse emery cloth instead of a wire brush. Using a stiff wire brush will cut grooves in it and you will only have about half the surface of the leather in contact with the friction rod.

It Knits Streamlined Stockings ..in ONE Operation—



Streamlined because it eliminates the tell-tale matching of leggers with footers. This Wildman Single-head, Single-unit machine knits the complete stocking from top to toe—each one as perfect as the one before.

Think what this absolute uniformity will save you in "seconds" and "rejects" alone. May we send you complete details?

WILDMAN MANUFACTURING CO.
NORRISTOWN, PA.

WILDMAN
THE WORLD'S STANDARD

The Modern

WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

Sometimes you will see a leather taken out that is dry and charred. This comes from not soaking them before they are put in or not keeping enough oil on the friction rod, although if they are soaked good before they are put in, they will run a good while without any grease on the friction rod before they will burn. When the rod gets dry and starts to heat, it will have a tendency to draw the oil out of the leather and spread it over the rod, thus keeping enough oil on the rod to prevent the leather from burning.—*Ray Stack in "The Full-Fashioned".*

Basket to Handle Grey Goods

EDITOR COTTON:

We have heard from time to time of the importance in keeping the stockings in 5- or 10-dozen bags as they go through various departments. From one standpoint we have thought this a remarkable method, but from another standpoint it is not so valuable. Let's see what happens when we place stockings in a bag:

The legger is the first operation and this work goes to the leg control department simply tied in a bundle with a ticket on it to show the style and number of dozens. After the goods are sprayed to determine which shift they were made on, they are sorted into 5-dozen bundles and placed into a dryer. A 5-dozen ticket is then made out to show the style, size, etc., and the goods are placed into a bag. The topper gets this bag and removes the stockings, and when they are footed the topper places them back into the bag and they go back to the leg department to be credited to the topper and footer.

Here the stockings are taken out of the bag again and placed into the dryer. When dry they are again placed into the bag and sent to the looper, who again takes them out, loops them and puts them back into the bag. The seamer also takes them out and puts them back and the examiner does the same, and by the time they reach the shipping department they have gone through some rough handling.

Wouldn't it be better if the hose were not placed in a bag, but were made into a 5-dozen bundle and the operatives instructed to handle the goods with care? Small racks could be built that would hold 5 dozen hose so they would not touch the floor, or hooks could be made alongside of the work table to hang the separate dozens on.

The bags get very dirty and it is reasonable to assume that some of this dirt gets into the silk, which doesn't do the silk any good. Not only that, but the bags, after being handled awhile, are far from sanitary.

If hosiery mills must use a container to send the stockings to the various departments, why not use a small canvas (or some suitable material) box or basket that is large enough to hold from 5 to 10 dozen pairs; the container could be designed so that it would not require much floor space.

But the main reasons hosiery mills should get away from bags in the handling of hosiery are that they are not sanitary, being washed only about once a year; dirt that has collected in the bags is detrimental to the silk; it requires much unnecessary time to pack and unpack the hose in the bags; and the extra handling of the hose when the bags are used causes more defective goods. I believe the use of boxes or baskets would remedy the situation.

CONTRIBUTOR NO. 7104

Even Stitch on Banners

EDITOR COTTON:

"CONTRIBUTOR NO. 7055" on page 166 of the April issue of COTTON has asked for the best method of evening the heel and toe stitch on Banner machines.

I suggest that he set the sinker cam and then the bumpers, being certain that they are the same. Next set the stitch cams with a gauge and then set the rise cams up so that the needles will pass freely. If the heel and toe stitch are not even, he can then measure the yarn just as it goes on the heel.

He can do just vice versa to tell which stitch cam is knitting the tightest and if they are not even, I suggest that he move the front stitch cam to even them. I have always found his method successful.

CONTRIBUTOR NO. 7096

Needle Trouble

THE FOLLOWING question was recently submitted to COTTON: "On Banner machines, what would cause the dropper to bring down more needles or not all the needles that had been raised by the up-picks, although the up-picks and the dropper are adjusted and functioning properly?—'Contributor No. 7057'."

The answer to this question is from a mill man:

EDITOR COTTON:

In answering "CONTRIBUTOR NO. 7057" I should know if he is using the Banner machine without an (evener dog) auxiliary pawl on the reciprocating shaft.

If the old type machine is being used, I would suggest that the number of strokes is unevenly divided while in the heel and toe. In other words, there is a difference in the strokes necessary to put the needles up and bring them down. One must expect to pull one long needle on the last stroke forward or it must leave three short needles up for the switch cam to handle; this is decided by the way the chain is built. That is, he must put a machine into the heel with a center lug, move the dropper in on a center lug and come out of the heel on a center lug, and there are three short needles left up. Or, if coming out of the heel a rear lug is used, one long needle will be handled by the dropper. When center, front or rear lug is mentioned, it means the three positions of each chain link under the controller pawl.

ARKANSAS PRODUCTS

FOR ALL TEXTILE PROCESSES

KIER BOILING	SOAKING	SOFTENING	DELUSTERING
SCOURING	BLEACHING	SIZING	WATER-PROOFING
FULLING	PENETRATING	DYEING	STRIPPING
DEGUMMING	FINISHING	LUBRICATING	THROWING

COTTON ✦ ✦ ✦

Diazonol: *used in the kier, also boiling off on jig or washer, effectively removes starches, waxes, etc., producing more absorbent cloth.*

Aquarol: *produces a water repellent finish.*

Arko Fireproofing Compound: *used in flame proofing cotton cloth—also viscose and acetates.*

Parapon R: *for finishing fine cottons to impart a very soft, full feel. Excellent for sanforizing. Greater shrinkage.*

Tetranol No. 1638: *a rapid wetter and penetrant for raw stock, yarn and piece dyeing, excellent for package dyeing.*

Penetrolin No. 703: *used in vat dyeing as a penetrant and foam dispeller.*

Pineol No. 345: *a soluble pine oil boil-off and dyebath penetrant.*

Culofix: *used as an after treatment to increase water fastness of direct colors.*

WOOL ✦ ✦ ✦

Arko *Fulling and Scouring Soaps.*

Lanitol: *penetrant, scourer and soap assistant.*

Anthrolic Acid: *used in dyeing.*

Hydrosulfite: *stripping stock and piece goods.*

Hydrolite L: *liquid stripper.*

Melton Finish: *improves body and weight of light fabrics and mixtures (unions).*

Penetrolin A Conc: *accelerates penetration of the acid bath in carbonizing.*

Parapon: *produces greater softness and improved hand in finished fabrics, also a leveling agent in dyeing, producing even shade.*

Paratex: *water softener and soap regenerator, used in last rinse after scouring to remove all soap from the pieces.*

Aquarol: *produces a water repellent finish on piece goods.*

Arko Tar Remover: *removes tar spots and oil stains from piece goods.*

Arko Fixing Salts: *for after treating union dyed piece goods to improve color fastness.*

Anthrachrome Mordant: *for chromate dyeing.*

SILK & RAYON ✦ ✦ ✦

Paramine: *imparts a soft, full, silk like finish to viscose and acetate fabrics and spun rayon.*

Aripel F: *finish and anti fume agent for dyed acetate.*

Permolite: *a synthetic resin, reduces slippage of filling yarn in rayons—used in conjunction with Genotex for permanent finishes on rayon and cotton. Produces a soft full finish on spun rayons.*

Resipon A.M.: *for finish and shrinkage control of spun rayons.*

Diazonol: *desizing and scouring on the jig or reel machine.*

Delustrol: *for delustering silks and rayons.*

Arkogel: *used in sizing viscose and acetate warps.*

Tetranol No. 1638: *a rapid and positive penetrant for use in dyeing, finishing and sizing.*

Arko Rayon Oil No. 1: *a lubricant for coning, winding and knitting rayon.*

Stripper T.S.: *stripping silks and rayons.*

Hydrosulfite S: *for reducing vat colors.*

Parapon: *dyeing assistant and finishing softener.*

Aquarol: *for producing a water repellent and spotproof finish.*

Lanitol: *boil-off and scouring assistant.*

Culofix: *improves fastness to water and bleeding of direct dyeings when dissolved in final rinse as after treatment.*

HOSIERY ✦ ✦ ✦

Delustrol No. 960 — Hosiery Finish No. 958: *used in combination for producing a low luster and body on silk or rayon hose.*

Aquarol H: *produces a splashproof finish.*

Decerinol No. 129: *for degumming and dyeing hosiery in one operation.*

Decerinol No. 229: *for degumming silk hosiery by the two-bath method.*

Stripper T.S.: *used in stripping silk, rayon and cotton hose.*

Hydrolite Z.S.: *a rapid stripping agent for silk hosiery.*

Lanitol: *a neutral scouring agent, used in processing and dyeing hosiery made from mixed fibers or containing a dyed acetate stripe.*

Resipon H: *a synthetic resin for finishing silk or nylon hosiery.*

ARKANSAS CO. INC.

NEWARK ESTABLISHED 1903 NEW JERSEY

Now if the machine has an evener dog, a different story comes out. The main racking pawl can be set far enough ahead to put the dropper in action before the kick of the evener dog which automatically puts the opposite pick in action first. As an example, on a Scott & Williams machine which has the dropper and the switch cam mounted in the center of the stop.

In reciprocation the dropper must handle one long needle on the last reverse stroke or the switch cam must handle three shorts, also determined by the position of the lugs on the chain link.

CONTRIBUTOR No. 7110

Length and Match Control on FF

EDITOR COTTON:

What system do you consider best for length and match control on full-fashioned machines?—CONTRIBUTOR No. 7114.

The best system I think you can install for length and match control in making full-fashioned hosiery is the constant checking of the different needle heads and the stitching of the machine. That is, keep the heads running the same courses per inch as nearly as possible.

In our plant the foreman checks this every day. And during any spare time that he has or that the superintendent has they check both the stitches per inch and the total length of the stocking.

Silk varies in thickness and one stocking may measure longer than another. Also, weather conditions have much to do with the total length; for example, if we check the stitches on a damp day, they would be off on a dry day. It is necessary to select the day for checking the stitches when the climatic conditions are best. We have found that the dry days are best for this purpose.

If there is a long rainy spell we do not bother the machines by adjusting them for length of stocking, but we leave things as they are until the next dry day. A rainy spell will cause the stockings to be off in length, but there is very little that we can do about it in our plant.

We keep a yardstick on every knitter's bench and we can measure the total length of the stocking there. However, keeping the stockings on length is not a problem with us because we keep a constant check on this. We never put on a new lot of silk without checking it thoroughly also. We believe this keeps us out of trouble, because hard and soft silk knit differently.

Occasionally we send hosiery to the testing house for their analysis, both as a check on ourselves and because we may get some good ideas.

CONTRIBUTOR No. 7119

Machine Cutting on Yarn Changes

EDITOR COTTON:

On page 166 of the April 1940 issue of COTTON, your "CONTRIBUTOR No. 7056" has asked the following question: "On Banner machines, when the proper construction is used in making a stocking according to the gauge of the machine, what causes cutting in the various yarn changes and how can this trouble be overcome?"

In my opinion, the most likely causes are that the raising cam is not close, thus letting the needles stay down too long before rising; also the lap too long, bad sinkers or needles, or the yarn lacking the proper softening process will cause this.

CONTRIBUTOR No. 7098

An Eye on the Knitting Mills

Harrison Mills, Inc., East Newark, N. J., organized to operate a knitting mill, has leased property at 251 Grant Avenue. Max Weinberg of the Max Weinberg Knitting Company, 39 W. 32nd St., New York City, heads the company.

Cupid Knitwear Company, Inc., 131 W. 35th St., New York City, has leased a floor in a building at 147 W. 35th St., and plans have been made for increased production at the new location.

Hinshaw Hosiery Mills, Balfour, N. C., will increase the size of the plant, it is reported.

Star (N.C.) Finishing Company has been granted a charter. C. V. Richardson, G. W. Scott and B. R. Koogler are interested.

Philadelphia (Pa.) Piece Dyeing Company, Somerset and Ruth Streets, has filed notice of organization to operate a dyeing and finishing mill.

Globe Underwear Company, Shoemakersville, Pa., will build a two-story addition to the knitting mill. Estimated cost is $45,000.

Harnett Hosiery Mill, Inc., Dunn, N. C., has resumed operations. It is reported that additional full-fashioned equipment is being installed and that officials are planning an expansion program for the near future.

Utica (N.Y.) Knitting Company is planning a multi-story addition at a cost of about $45,000, with equipment.

Central Knitwear Mills, Inc., 101 W. 37th St., New York City, will shortly begin the manufacture of knit goods.

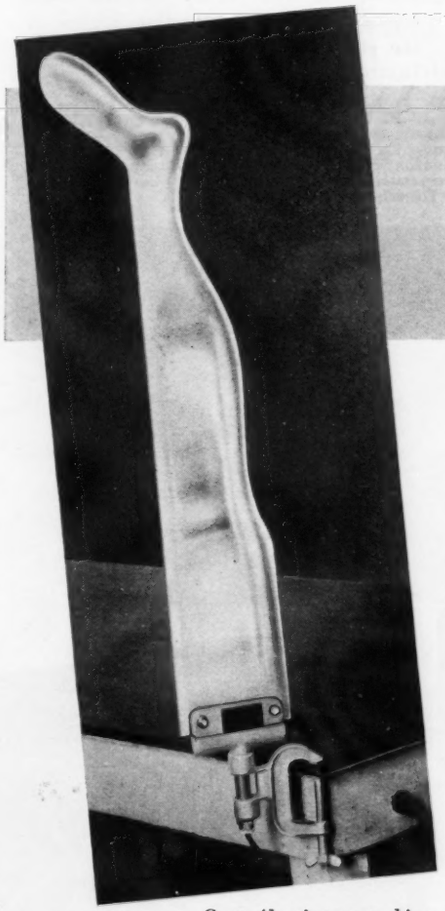
Colonial Knitting Mills, Cape May Court House, N. J., is reported to be re-opening under new management.

Infant Socks, Inc., Eufaula, Ala., is installing additional machinery.

Interwoven Stocking Company, Berkeley Springs, W. Va., has purchased a tract of land 100x295 feet adjoining the local plant.

Boarding steps up

WHEN THE FORMS ARE ALUMINUM



Cast Aluminum stocking drying form of the internally-heated type.

Thin Aluminum boards made of rolled sheet.

Aluminum stocking drying forms have an exceedingly hard, smooth surface; the Alumilite* process gives them an oxide finish of glass-like hardness. With these forms, boarders can step up production considerably and produce stockings with a finer finish. Here's why—

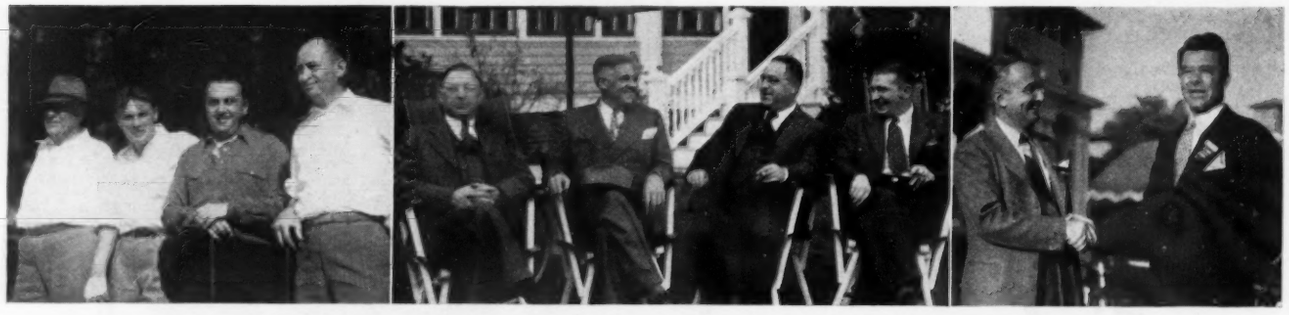
The smooth surface enables boarders to dress wet stockings on the forms quickly and easily, with a minimum of strain on the fabric. The hard surface effectively resists the abrasion encountered in boarding and stripping operations. There's no roughness developed to damage delicate hosiery, and no corrosion to cause staining.

Internally-heated forms, when made of Aluminum, are more efficient and do a better drying job. Aluminum distributes heat quickly and evenly. Their lighter weight makes them easier to handle. ALUMINUM COMPANY OF AMERICA, 1939 Gulf Building, Pittsburgh, Pennsylvania.

*Patented

ALCOA · ALUMINUM

Carolina Yarn Association Outing



Left to right: a foursome including **Dick Wetzel, Carl Lorenz, Ray Weaver** (the president of the association) and **Gus Aberle.** Next group: **E. W. Saunders,** of Wiscassett, **Dick Wetzel** again, **Nick Apprich,** of Textile Machine Works, and **Max Schmidt.** At right, **Brown Mahon** of Dunean Mills is greeting **Frank Coker,** of duPont Rayon.

THE ANNUAL golf tournament and outing staged by the Carolina Yarn Association was held at the Carolina Hotel, Pinehurst, N. C., on October 25-26. This year the event, given each year by the yarn salesmen and other members of the organization for southern knitters and weavers, drew an attendance of nearly 600.

A 36-hole handicap golf tournament, a two-day skeet shoot, and cabaret entertainment were furnished by the association, and there was in addition informal diversion of other kinds.

Ray W. Weaver, Textile Machine Works, Greensboro, N. C., is president of the association; John E. Sherrill, of Tennessee Eastman Corp., Greensboro, is vice-president; Gordon Hope is secretary, and Joe Mason treasurer.

Nearly 100 attractive prizes were awarded in the contests. Russell Hodges won 1st low net, and Darden Hampton 1st low gross, in the golf tournament. J. H. Mason, W. C. Thompson, and C. G. Sowden were winners of their respective flights in the skeet tournament.

In the first row below, the first group is, left to right, **Walter Thompson** of Torrington, **W. J. Rooke** of "Cotton", and **A. P. Gumaer** of "Textile Age". The other group is an "all-rayon" foursome, including, left to right, **J. P. Marchington** of Tubize-Chatillon, **Carl Robbins** of Colonial Mills, **Stanley Hunt** of Textile Economics Bureau, and **Frank Muschamp** of Tubize-Chatillon. Second row: First group, a Tubize foursome: **Leonard F. Smith, Dudley Bryan, C. New,** and **John Bassill,** president. Center: **B. Davidson, H. Neubert, Phil** Brown of duPont Rayon, and **Larry Hale** of Drayton Mills. At right: **M. E. Pierson,** of Hudson Hosiery, **E. Neu, J. Wilkin,** and **Fritz Seifart** of Hudson Hosiery. Third row: In the first group, **Sam Diggle,** who ran the golf tournament, is seen between his assistants, **Roy Tinsley** and **Bill Atkins.** The final threesome includes **Dick Breidenbach** of Royersford, **W. Hoesel,** and **Bob Baker.**

They mean a lot... to Me

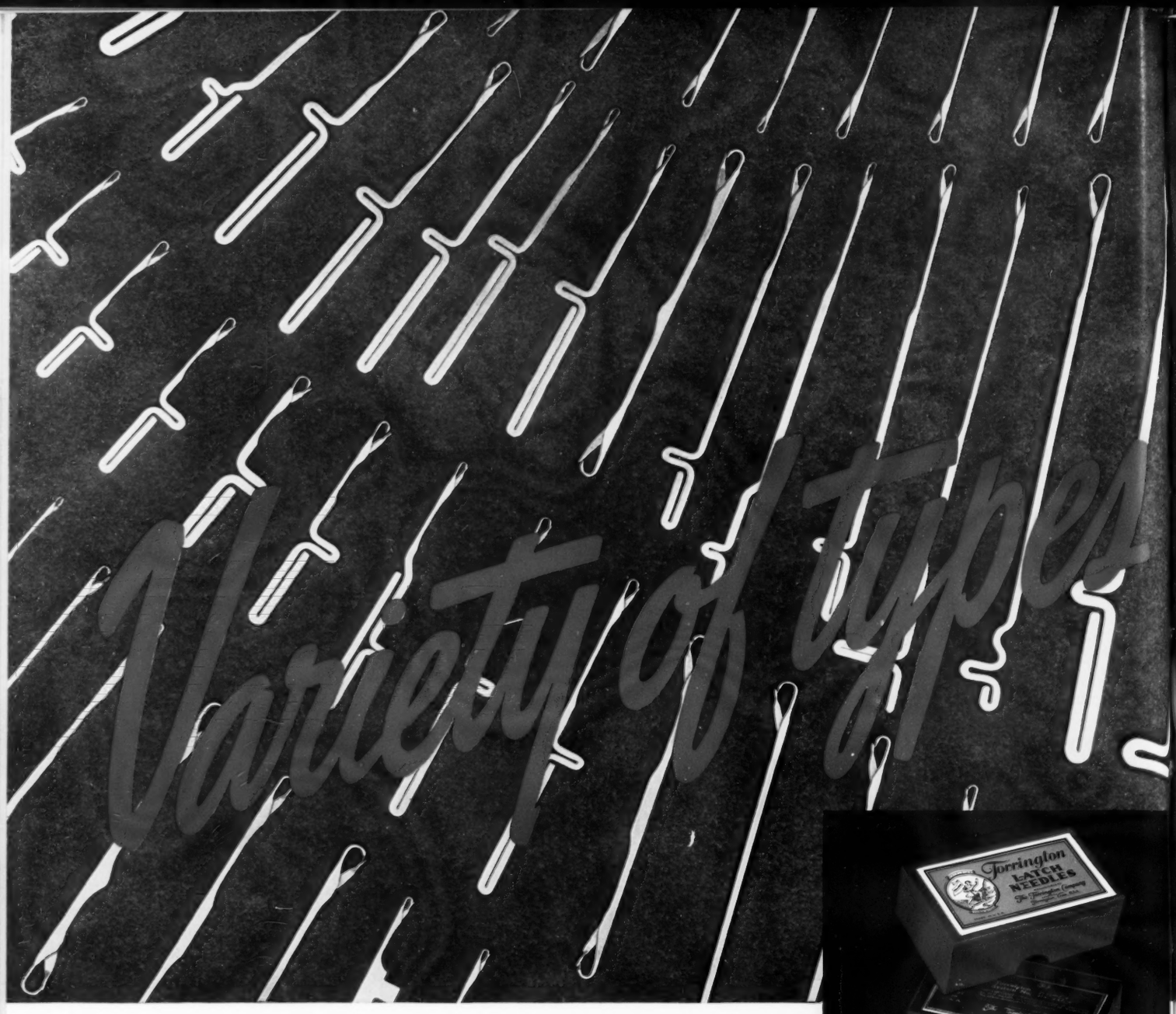
"Not the least of a school teacher's troubles is selecting the right kind of stockings. They have to be smart—but not *too* smart. Sensible—but not *too* sensible. I look for the kind that is reasonably sheer, neat fitting and, of course, durable. When I find hosiery that has a combination of all these qualities I buy them, because in my work they mean a lot to me."

Thousands of women in every walk of life are constantly seeking hosiery that combines all these qualities. Good knitting, of course, is essential. It is, in fact, the basis of these qualities and is universally demanded. Torrington Needles, the machine-made needles with the machine-controlled uniformity of temper, strength, finish and overall dimensions, can help you obtain the good knitting that counts so much in merchandising hosiery.

ESTABLISHED 1866

TORRINGTON

Needles and Sinkers



...BUT NO VARIATION IN QUALITIES

When you use Torrington Needles you have the satisfaction of knowing that there is a wide variety of types available at all times to meet your requirements. But beyond this is the special advantage of knowing that the needles of each type are free from variations in the qualities that count in achieving good knitting. For Torringtons are manufactured with controlled precision by *machine* methods . . . methods that assure uniform temper, finish, strength, dimensions, and *endurance*—the ability to withstand long, hard usage. For economy and efficiency in securing the best knitting results use machine-made Torrington Needles.

TORRINGTON *Latch* **NEEDLES**

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A. • ESTABLISHED 1866

The Torrington Company . . . 1640 Fairmount Ave., Phila., Pa.
The Torrington Co., Inc. . . . 200 Fifth Ave., New York, N.Y.
The Torrington Company, 538 South Wells St., Chicago, Ill.
The Torrington Company, Guilford Bldg., Greensboro, N. C.
The Torrington Company, 210 South Street, Boston, Mass.
The Torrington Company, 1709 Locust St., St. Louis, Mo.
E. G. Paules . . . Bendix Building, Los Angeles, Calif.
The Torrington Co., Ltd., 137 Wellington St. W., Toronto 2, Ont.

Factories at: Torrington, Connecticut • Orange, Mass.
Bedford, Quebec • Coventry, England • Aachen, Germany

TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Full-Fashioned Hosiery Demand Improves But Philadelphia Plants Not Rushed Yet—Higher Cotton and Wool Forcing Upward Adjustments in Underwear Prices—Army Buying of Knit Goods Impressive and Important Market Factor — Retail Trade Expanding—Silk Embargo Talk Heard

October 16, 1940

KNIT GOODS manufacturers are now operating at the best rates of the year as an average with marked improvement in women's full-fashioned, many types of underwear and outerwear. Full-fashioned hosiery business has been stimulated tardily by improvement in retail demand and also by talk of a possible future embargo on the importation of silk from Japan in view of the growing differences between the two countries in the Far East. Philadelphia mills making this type goods are busier but not so much as are southern full-fashioned mills and local mill men again talk of the wage differential as making Philadelphia wait until lower cost areas in the industry "get filled up first". Women's seamless goods are lagging but men's half-hose plants are busy. Sharp advances in silk, cotton and wool yarns are hardening the goods end of the market.

Full-Fashioned

Although Philadelphia plants have been slow to feel it yet there has been a marked improvement in the general full-fashioned situation. One reason for this is the strength in raw silk which has been forced up more than 35 cents per pound in a month due to the growing tension between Japan and the United States over the Far Eastern situation. In addition, there has been a larger demand for women's full-fashioned hosiery at retail and this is felt to be only the beginning.

Retailers are not buying full-fashioned far ahead but most are still on a hand-to-mouth basis and say they will not change this though there is talk of the silk embargo being a possibility. This means that mills will continue to book orders in hand-to-mouth fashion all fall and that the chances are with low retail inventories there will be a large buying at the last minute for the holiday season, always the largest volume of the year.

No changes in prices have come this month though some of the local mills making nylon full-fashioned have advanced prices, bringing them into line with the latest price increases branded mills announced recently for nylons. They put nylon at $1.35 and no lower, feeling that this would help the sale of silks at a dollar and under. Philadelphia mills feel that they will not become rushed until the South is filled up due to alleged lower labor costs there.

Shipments of women's full-fashioned goods have been running under the same time a year previous until September and then the volume is estimated to have moved up and for the balance of the year indications are some of the early 1940 lost ground may be made up. Further increases in silk could easily bring about strengthening in silk full-fashioned from the very low levels that now exist.

Half-Hose

Shipments of men's standard length socks have been running about 8 per cent under the same months of 1939 but shipments of slacks or the shorter socks have been doing better and have for the first eight months averaged only 2 per cent under the same period a year previous. During the last month knitters of half-hose have been booking business at a much more active rate and some of them report being sold ahead for several months in the popular types. During August shipments of the short socks were slightly larger than during the same 1939 month. Prices of yarns used in these lines have been strengthening each week during the last month so that all types of cotton and wool yarns are higher with silk now joining the upward movement. This means that yarns of all types except rayon have advanced which has caused some buyers to get their orders in early as they fear this may later result in higher prices for such goods.

The heavy buying of the army and navy has been a factor that has stimulated the half-hose market both in cotton and wool lines. The army depot at Philadelphia on October 18 opened bids on 9,000,000 pairs of tan mercerized socks and it has been buying wool numbers actively all of which tends to make the market trend away from the civilian buyers. Prices are expected shortly to harden and reflect this movement.

• The new "Moc-a-soc" for men's, boys', and girls' sportwear or dresswear, golf socks, etc., is so designed that the top will fall just below the very smallest portion of the leg. The purpose of this lies in the principle that the elastic roll wants to come back to its normal position and will roll upward on the leg, seeking a smaller diameter, pulling the sock up, always keeping it close and neat around the ankles. The segment of the suspension arc should be approximately one-half inch. L. V. Edwards & Co., Box 59, Atlanta, Ga.

Seamless

Although in recent weeks knitters have been complaining of the small volume of new business in women's seamless numbers these lines make a relatively good showing in comparison with full-fashioned when shipments for August are studied, showing a drop of only 0.7 per cent with 6.8 per cent drop in silk compared with a year previous. But for the first eight months of the year shipments of seamless women's numbers dropped 5.6 per cent over the period when full-fashioned shipments were dropping 2.5 per cent, but included in these were the shipments of nylon full-fashioned goods which helped the picture some. With raw silk trending higher many in the trade expect that more emphasis will be placed in the coming months on seamless than when lower silk made such goods in the full-fashioned end so cheap. Seamless will be benefited more in proportion as full-fashioned advances.

Underwear

Spring, 1941, underwear lines were opened early this month and price changes were not large, most remaining unchanged but the picture is rapidly changing. Cotton and wool yarns are jumping in price so that knitters are now ready to place goods advances in effect to offset the new and higher yarn costs. This is possible because the underwear mills have been booking a nice volume of business although nothing compared with the very heavy coverage that was apparent a year ago or just at the time the war started.

Buying for spring of next year has been especially impressive in the men's numbers and some underwear mills in this section are now on extra shifts for the first time in months. Fall or heavy underwear prices have also been advanced in some instances which is due to the sharp advances that have come in the wool end, making wool and merino type yarns much higher. In addition, the army buying of underwear of both cotton and wool has been very large and knitters have been rushed making the earliest possible deliveries on such orders with prospects more of the same will be forthcoming in the near future. Combed mills are late in making deliveries of combed yarns in instances.

Possibility of Silk Boycott Again Heard

Some in the hosiery industry assert that the new turn in international relations wtih the line-up of Japan with the Axis powers may revive the possibility of another attempt at the boycott of silk hosiery on the part of consumers. This was the first reaction among several large buyers of hosiery when the announcement of the pact between Germany, Italy and Japan was made. Such factors in the market made light of the Japanese hint of preparing to use all of its silk at home. The hosiery industry has a larger interest in the imports of raw silk than any other single business. For some years past it has been steadily becoming the largest user of silk in the world and for seven months of the present year its takings of raw silk amounted to over 80 per cent of the total used in this country.

The attempt at boycott several years ago began with the invasion of China by Japan and the reports of bombings of cities in the interior. Some consumer organizations at the time attempted to raise public opposition by means of the silk boycott. But the actual results were negligible and a counter-campaign in which the labor unions joined with industry heads successfully met the move.

FORECAST

(Opinion submitted by COTTON'S market correspondent)

Philadelphia, October 16, 1940

Vast sums being expended by the Federal government in the rearmament drive have already had a great bearing upon business and in September the business levels for the country hit new high ground. The situation while as active so far as production goes as 1929 has distinct differences, there being no inflation as yet of commodities and profit margins for most manufacturers are still nothing to compare with those days. In fact, there are many who feel that while business levels will remain very high in the United States for several years they do not feel that prices will go too high and also that no abnormal profits will be made.

Good business and fair profits are in prospect. Buying is being stepped up and more coverage ahead is coming into the picture and this always brings in its wake higher prices so that there may be bottlenecks in such textiles as ply combed yarn, for example, and when these develop it is very difficult if not impossible to keep prices down. This may mean that some lines such as textiles being in the rearmament picture may become more active and jump higher in price than some other lines of business. In the last month for instance there have been very sharp price increases in textiles made from wool and while cotton has not changed much there have been important upturns in cotton yarns.

The Far East situation is bringing about increases in silk prices so that predictions of many that commodities may not go up but might go down in the present situation may not be the fact. Indications point to still higher prices for some textile fibers. The abnormal world situation may force silk considerably higher; the war will continue wool on high levels. Rayon is not changing but soon this too may see a price advance.

So far as volume in the coming months is concerned knitters will have no complaint but they will be concerned with getting out goods at low prices, which should not be lost sight of. Low priced goods will be in the best demand even though business levels are so high throughout the country. At the same time, profit margins will not spurt too much but should be gradually better. Prices of knit goods are going to reflect the changes in the silk, and wool markets but cotton and rayon are going to change only little. Cotton goods and yarns are apt to continue their present higher levels and may go somewhat higher but there may be an interruption to buying if prices spurt too high so that a readjustment might bring them down temporarily although a firm price situation is ahead for most knit goods and textile fibers.

At the present time the full-fashioned hosiery business has been in an upset situation without the handicap of a boycott move. The interjection of the new nylon hosiery into the picture has added to the upset conditions. For much of the year the new nylon numbers in women's full-fashioned have been a sensation even though nylon deliveries have amounted to but 4 per cent of the deliveries of full-fashioned hosiery of all kinds. In the situation now raised by the talk of a possible embargo the nylon problem assumes greater importance. It cannot hope to displace raw silk by an appreciable extent for some time to come, probably not before another year, but the fact that the new hosiery has made such a successful start does have a bearing in the current situation of raw silk.

Also it is known that there are other fibers that can, if necessary, be used in the manufacture of full-fashioned and seamless hosiery. There are lisle yarns as well as other synthetic yarns in addition to nylon that can and have been successfully used in the past. The finer qualities of rayon yarns have in times past when silk was high, successfully displaced that fiber in hosiery making. At present some of these yarns, for example Bemberg, are being used in the full-fashioned hosiery trade. There is also information of other companies than the one that has successfully produced nylon, experimenting with new yarns for the hosiery industry. Buyers therefore who visualize the chance of silk being the object of public resentment, foresee the chance of many developments in the full-fashioned end of the business in the next year which probably means something entirely different than now exists.

Hosiery Ass'n Analyzes Effects of Axis Alliance

Uncertainties in the silk situation as they concern the hosiery industry, the largest user of Japanese raw silk, were outlined in a special bulletin by the National Association of Hosiery Manufacturers. It emphasized that last year the hosiery industry accounted for about 93 per cent of the American mill takings of Japanese raw silk. This was equivalent to about 76 per cent of the total silk exports from Japan to the world during that year. From this the Association went on to point out that the hosiery industry is very much concerned with the change in the political relations between Japan and the United States which is resulting from the program which the former country is pursuing in the Far East.

The association said "The question arises as to whether things are moving in a direction which would deprive us of the commodity and would require our industry to adapt itself to the use of other commodities where silk is today used. This is conceivable if the battle of embargoes becomes more and more acute and it is certainly likely if relations between the two countries become either severed or belligerent. In such vent when our stocks of raw silk in this country are exhausted, with the supply of nylon necessarily limited and its expansion requiring time, it is conceivable that our industry might have to substitute high grade lisles and rayon for silk. Our individual manufacturer is doubtless wondering to what extent he should provide himself

AUTOMATIC LUBRICATION

Willcox and Gibbs Sewing Machine Company is the first manufacturer to build complete *automatic lubrication* into three major sewing machines, serving the textile industry.

In 1937, Willcox and Gibbs Sewing Machine Company first introduced to the textile trade their "Superlock", a high-speed over-seaming machine incorporating complete *Automatic Lubrication.*

In 1939, *Automatic Lubrication* was added to the "Feldlock", the felling machine which first incorporated the principle of feeding work *off* instead of *on to* the arm.

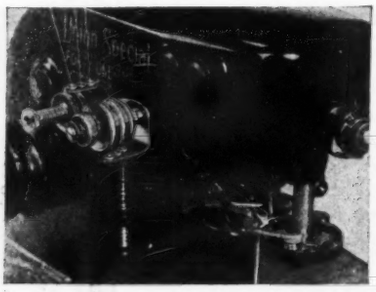
NOW the "W&G" Lockstitch is equipped with a new and exclusive system of *automatic lubrication,* thus rounding out the principle of complete *automatic lubrication* for three major machine types utilized in the sewing rooms of the textile industry.

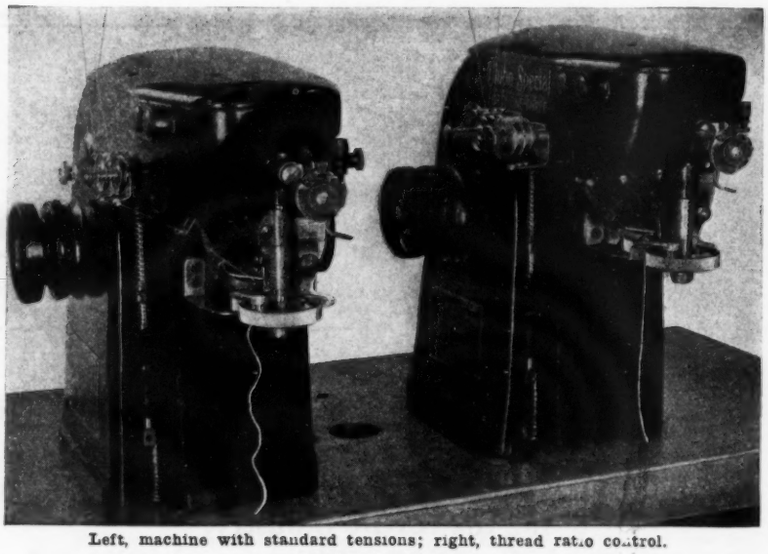
***Automatic Lubrication* is a radical advance in sewing machine design and manufacture. It contributes to greater ease of operation, increased production and lower maintenance costs.**

Every manufacturer, interested in the scientific management and economical operation of his plant, will want to investigate the possibilities of the "Superlock", the "Feldlock" and the "W&G" Lockstitch. All three, with *automatic lubrication,* are now ready to serve you.

C. D. Mercer.
PRESIDENT

WILLCOX & GIBBS SEWING MACHINE CO.
NEW YORK, N. Y.





Left, machine with standard tensions; right, thread ratio control.

Thread Ratio Control for Hosiery Seamers

The Union Special Machine Company, 438 Franklin St., Chicago, Ill., has announced a thread ratio control for its complete line of hosiery seaming machines. The device brings about absolute control of the ratio of one thread to another in forming a perfect stitch structure for seaming hosiery, and is said to eliminate all uncertainty in seaming by measuring the thread mechanically, and insures proper tension by providing one master tension for all threads. Weather conditions will not affect the stitch structure produced and no longer must tensions be adjusted every morning when there has been a change in atmospheric conditions. Also, tight, elastic seams on both foot and leg are certain because the thread ratio control maintains the predetermined ratio of needle thread to looper thread, regardless of thickness of material. It can be applied to the Class 41300 machines already in use.

with raw silk at current prices and out of current available supplies. This is one question which each manufacturer must answer for himself after an appraisal of the facts and consultation with such persons as he feels may be able to give him some guiding advice.

"The question is raised as to whether any serious boycott of silk goods may develop among consumers because of dissatisfaction with the developments in the political relations between the two countries. This is always possible. But the results of such a boycott could be much larger than they were in 1937 and still not take serious proportions. Of course, if a break takes place between the two countries a different situation would follow and our women would willingly and gladly wear products from available substitute yarns whatever they may be. In such event a shift from silk to other commodities would create not only manufacturing and merchandising problems but likewise would probably have a considerable effect on the employment of the industry due to lessened consumption. Such effect would be spread through the 26 states where there are located today plants making silk stockings." The association also points out an embargo on silk would have serious effects in Japan which depends so much on this commodity to give her foreign exchange with which to buy other products abroad.

Another Nylon Yarn Plant to Be Built

A second plant for the production of nylon yarn will be built by the Du Pont company at Martinsville, Va. According to the company, the plant with that in Seaford, Del., will have an annual capacity of 16,000,000 pounds. This would seem to mean a plant about the same size as the first and second units at Seaford which have been reported as having a capacity of about 8,000,000 pounds a year. Work is to commence at once on the new project and it is expected to come into production late in 1941 and to be in full operation in the spring of 1942. The completed plant at Martinsville will employ about 750 persons and an expenditure of approximately $11,000,000 is planned in the present development. The combined capacities of Seaford and Martinsville will be more than five times the output of nylon yarn originally contemplated when the first unit in Seaford was authorized late in 1938.

It was stated by the company that the aggregate investment made or authorized for nylon manufacture is $28,000,000, and it was emphasized that no other Du Pont product has been so heavily backed by the company in so short a time. According to Du Pont, Martinsville was chosen for the site of a second nylon production plant because of its proximity to the textile industry in the South. So far as is possible workmen for the new plant will be recruited in the vicinity.

Rumors that large quantities of nylon yarn are being taken by the government for parachute fabric thereby limiting the supply of such yarn for hosiery are incorrect it was stated by the company. Reports that the government was taking over all the nylon production or most of it have been printed in consumer newspapers. It was stated some time ago by the National Association of Hosiery Manufacturers, that 90 per cent of total nylon production was going into hosiery. The amount of nylon going into defense materials so far is very small.

Union Appeals to Labor to Resist Pay Cuts

In commenting on the recent request of certain hosiery mills in the Philadelphai section for wage reductions, officials of the American Federation of Hosiery Workers state that most of these same mills are speeding up operation and working reasonably full time throughout the Philadelphia area. This review of the mill situation, however, is not confirmed by a large number of manufacturers who assert that while improvement in the hosiery industry generally has been noticeable, Philadelphia mills have yet to feel its effects. Many manufacturers of full-fashioned goods in this market, while admitting they hoped to become busy, feel that this will not be possible until mills in other sections become sold up. Knitters in this section say that full-fashioned plants in other sections, particularly in the South, have considerably lower labor costs. They say this

TOPS for tops & feet

AMERICAN

Super-mercerized

*Durene**

Stops garter runs and gives greater foot comfort with superior wear in service-weight full-fashioned stockings.

Cuts material costs and practically eliminates yarn failures as a cause of delays—waste—seconds.

* 1. MUST BE MADE OF COMBED YARN
2. MUST BE WARP MERCERIZED
3. MUST BE A 2-PLY YARN

Fabricord

AMERICAN'S Special 3-ply yarn for English Rib Construction

AMERICAN

YARN AND PROCESSING COMPANY

MOUNT HOLLY (HYDE) N. CAROLINA

CHICAGO, ILLINOIS
Mr. E. W. Wood
222 West Adams St.

CHATTANOOGA, TENN.
Mr. Tom Moore
735 Chestnut Street

HIGH POINT, N. C.
Mr. E. J. Holbrook

NEW YORK, N. Y.
Schoolfield & Co., Inc.
40 Worth Street

PHILADELPHIA, PA.
Wm. S. Montgomery
607 Beury Building
3701 N Broad Street

CHARLOTTE, N. C.
Cosby & Thomas

is true, notwithstanding the minimum of 40 cents an hour set for the full-fashioned workers under the Fair Labor Standards Act.

They claim that so many knitters on various operations in the plant are paid higher than the minimum set by the Federal law and add that uniformity has not been nearly so marked in the full-fashioned end of the business as in the seamless end. It is on these grounds that some of the manufacturers here approached the union recently for wage reductions. Commenting on the southern situation, union officials have pointed to the increase in rates for nylon topping and legging in Virginia mills and declare that "Other increases may be expected in certain southern situations." The general feeling in the union is that if southern workers will stand firm there will be no reduction. "Mills in the Philadelphia area approached their shop committees with requests for reductions at a time when the industry generally appeared to be at the end of its deepest depression," the union stated.

The membership of the hosiery union in a referendum ballot in which slightly more than 8,000 votes were cast decided not to authorize the union's national executive board to take any action on the third shift problem. The vote as announced by union headquarters was 3,983 members voting against any action and 3,583 in favor. The workers were asked to vote on a third shift resolution adopted at the annual convention in Milwaukee last June which pointed out that the number of full-fashioned hosiery machines which are being operated on a third shift basis is increasing and represents a trend in the industry which if continued "will seriously endanger the best interests of all hosiery workers and particularly the members of the federation". The resolution declared that the union must be prepared to meet the situation and resolved that the national executive board be authorized to adopt means to protect the interests of the membership with reference to the third shift method of operation.

National Defense Improves Underwear Trade Outlook

The underwear trade opened its 1941 spring lines in an atmosphere influenced by the national defense program. According to Roy A. Cheney, president of the Underwear Institute, trade sentiment has picked up most gratifyingly in recent months because of direct and indirect benefits from national spending for defense. That, coupled with the fact that underwear prices have been at very low levels and as such moderate advances as have been made were solely to offset increased material or labor cost, indicates that buying over the next three months will likely be very active, according to Mr. Cheney. The industry has benefited from a volume of Government purchases of underwear that to date in 1940 is nearly four times as much as the volume for the same period last year.

He said with plans for conscription rapidly nearing a conclusion this business is certain to assume far greater proportions. The army furnishes each new recruit with six suits (shirts and drawers) of lightweight underwear and two suits of heavy underwear as an initial assignment. In the navy the allocation is four suits of lightweight underwear and two suits of heavy weight. This requirement plus replacements and stocks is removing considerable underwear capacity from competition in regular commercial trade. Because the Underwear Institute anticipated this heavy demand requirements have been met with a minimum of dislocation in the underwear field. Mr. Cheney said government requirements of a certain new type of knit fabric created somewhat of a tax on capacity because of the newness of this type of merchandise until the Institute had the opportunity to compose practical solutions which were promptly accepted by the War Department.

Durene Promotion Getting Real Results

The Durene Association of America being encouraged over the results to date will continue its promotional work along similar lines for the future, in the aid of manufacturers, wholesalers and retailers. Dean Hill, president of the Association, called attention to the positive results in its campaign against the undershirtless man. This work will be further emphasized in the educational program with retail sales. It will be used likewise in stimulating cooperation from the manufacturer and wholesaler. The main theme of the future campaign will be along those lines already proven successful but expanded by additions developed from experience. Identification of Durene garments will be basic in the work. The campaign to bring back many of the younger men to wearing undershirts will be constantly emphasized, Mr. Hill said.

The success of Durene in the women's underwear field has also been noteworthy and new numbers made of Durene yarn, all identified, have been put out with large success by more manufacturers so that prospects in this end of the knitting industry are accordingly viewed with enthusiasm New fields have lately been developed, sweater manufacturers having put out

Patents Granted

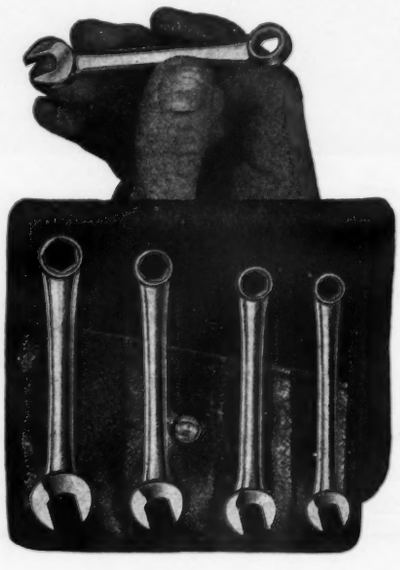
According to Paul B. Eaton, patent attorney, Charlotte, N. C., Carl C. Sorensen, formerly of Charlotte and now of Westwood, Mass., has been granted a patent on the manufacture of a stocking yarn. The patent relates to a special twist given to the yarn whereby the life of the stocking from this yarn is several times that of the ordinary stocking and produces a very sheer stocking for a given number of threads. One important advantage of the stockings made from this yarn is that they are practically run proof due to the twist of the yarn.

Curtis E. Honeycutt of Gastonia, N. C., was granted a patent for an apparatus for rebuilding worn flutes on textile rolls. By use of the patented methods, the fluted bosses on top rolls of drawing frames can be built up to original size by running cutting rollers along the grooves.

H. A. Woodhead of Graniteville, S. C., was awarded a patent on a means for treating cloth such as bleaching, dyeing, etc. The salient feature of the invention is the placing of a plurality of pairs of rolls in a treating bath and capsizing or reversing the position of the rolls when one roll becomes empty —giving a continuous process.

New Wrenches

Snap-On Tools Corporation, Kenosha, Wis., has developed a wrench for handling tricky little jobs where small nuts and bolts are used. Each wrench has an open end and a boxocket end of the same size. The set includes ¼-inch, 9/32-inch, 5/16-inch and 11/32-inch sizes. Extreme care is taken in the manufacture of the small tools to insure a proper grip on small nuts.



The SINKER WITH THE PATENTED HARDENED THROAT

AND THE

HARD BUTT

GIVES YOU...

ESS BREAKAGE
ONGER SERVICE
OWER OPERATING COST
ONGER UNIFORMITY OF PRODUCT

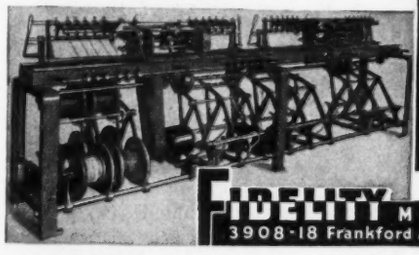
OUR RECONDITIONING SERVICE
Means Real Saving to You
IN Operating Time / Replacement Cost
If you are now a customer—you know this.
If you are not—a trial will convince you.

THOMAS & SKINNER
STEEL PRODUCTS COMPANY
1101 East 23rd Street Indianapolis, Indiana

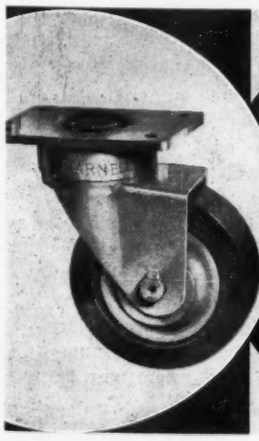
FIDELITY MULTIPLE-UNIT SPOOLING MACHINE

Measures and stops automatically, maintains uniform tension, gives even, smooth lay. Spools quickly changed. Compact, sturdy, speedy and efficient.
Write for catalog of FIDELITY Spooling Machines.

OTHER FIDELITY MACHINES
Braiders
Backwinders
Circular Knitting Machines
Cylinders and Dials
5-Color Yarn Selector & Knot Tyer
Fringe & Tassel Machines
Giant Package Winders
Raschel Machines
Ribbers
Wire Covering Machines
Belt Loop Cutters
Pocket Folding Machines
Special Machines designed and built



FIDELITY MACHINE CO.
3908-18 Frankford Ave., Philadelphia, Pa.

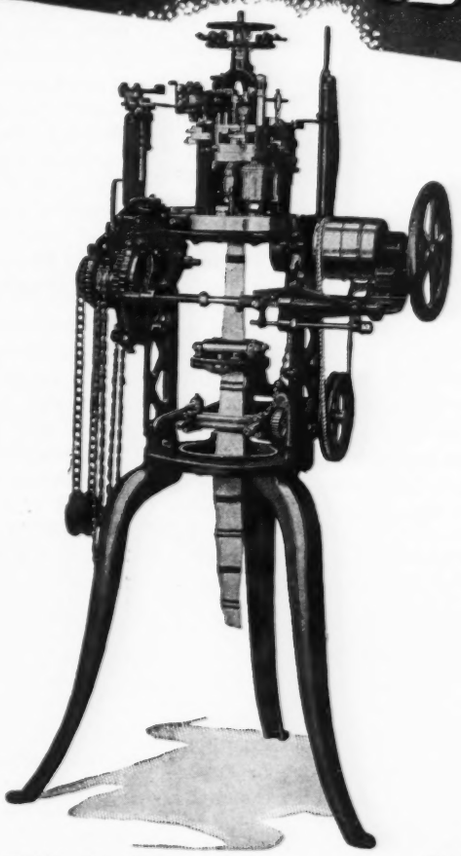


Meet Your
CASTER & WHEEL
Requirements from the
DARNELL Line . . . .

There is a type of Darnell Caster and Wheel for every kind of service—you are sure to find the exact caster or wheel for your needs in the Darnell line of nearly 4000 models. ASK FOR DESCRIPTIVE MANUAL.

DARNELL CORP., LTD. • LONG BEACH, CALIF.
36 N. CLINTON, CHICAGO — 24 E. 22ND, NEW YORK
DARNELL CORP. OF CANADA, LTD., TORONTO, ONTARIO, CANADA

Brinton Ribbers



Rubber Lay-In
Picot Edge
3 & 4 Color Yarn Changes
Rack Welt
Mesh Designs
3 & 4 Feed Machines

•

Let the new, modern Brinton Ribbers carry the burden of your production problems. Modernize your old ribbers, by converting to the latest styles. . . . For dependable, economical production—rely on Brintons.

Full particulars on request

CIRCULAR KNITTING MACHINES
BRINTON

3700 KENSINGTON AVENUE
Philadelphia, Pa.

attractive garments of Durene which have taken on with the public in a large way. The opportunities in women's sweaters in particular are mentioned and the glove field also has been successfully entered. Dean Hill also reports that the athletic uniform end of the business is expanding rapidly.

Hosiery Workers Affected by the Draft

With October 16 set as registration date for all male citizens of the United States between 21 and 35 years of age under the provisions of the Burke-Wadsworth Conscription Act, a survey of the hosiery industry in Reading and Berks County, revealed that an estimated 1,800 to 2,000 hosiery workers in that community will be affected by the provisions of this compulsory military training law. This estimated number of male hosiery workers will have to register on October 16 but the number that may actually be called to military service immediately may be only a fraction of that total, possibly less than 300 in that large hosiery center. In view of this it is believed that no great disturbance in the labor situation in the Berks County mills will result from the operation of the draft law. It is felt that with the various classifications contained within the conscription law and the intention of the Government to limit the total number of conscripts to 400,000 for the first year, the great majority of the Berks County hosiery workers are not apt to be called for some time to come.

New Apex Parley Called by State

In the interest of better labor-management relations in general the Pennsylvania Commerce and Labor Departments joined in a conference aimed to settle the Apex Hosiery case. Lewis G. Hines, Secretary of Labor and Industry, and Richard P. Brown, Secretary of Commerce, brought the various factions together seeking a compromise of the company's two damage suits for a total of $2,300,000 against the hosiery union and the County of Philadelphia. Previously the Apex Hosiery Co. took the stand that its agreement with the union was applicable only to matters of collective bargaining and not for arbitration of its suit against the union for damages arising from the 1937 strike. One of the suits pending is a claim for $1,170,000 for damages to the plant, machinery and business from the strike which the company filed in Common Pleas Court, Philadelphia, after the United States Supreme Court had reversed a $711,932 Federal Court judgment on the ground the anti-trust law had been wrongly applied. The other suit is for $1,000,000 against the County of Philadelphia, pending in Chester County Court. Following the meeting it was only announced that progress was being made.

Fewer Full-Fashioned Hosiery Workers

The number of workers in the full-fashioned hosiery industry in June was reported as 88,899 comparing with 91,059 workers for the same month a year previous. Part of this decrease in the number of full-fashioned workers is reflected in the drop of 4.6 per cent in full-fashioned production for the first six months of this year compared with last. The uncertainty of the silk market, the introduction of nylon and the war situation also have all played their part in this decrease. The National Association of Hosiery Manufacturers reports that 20.6 per cent of silk goods this spring were made with cotton or rayon welts.

Knit Rayon Market Has Rapid Growth

Rayon is moving forward at a rapidly accelerating rate in knit goods this year. In all divisions, hosiery, underwear and outerwear, yarn improvements and manufacturer ingenuity have combined to develop new uses and applications for rayon to a degree unthought of a few seasons ago. One of the most important developments has been in the tricot dress fabrics in which the trend to sheerness is a characteristic. Printed tricots are also increasing in popularity and the success of tricots in the dress field has widened the call for such fabrics from other trades. These fabrics went into blouses and house coats quite actively this year. Rayon is also strengthening its place in knitted fabrics for millinery and this year has seen a marked rise in demand for knitted panne velvet from the millinery trade. Knitted rayon napped fabrics are going into both outerwear and bedroom apparel in increasing quantity with bathrobes, pajamas and lounging robes made of brushed rayon being well received.

Higher Cotton Yarns Strengthen Underwear

Advances in cotton yarn prices over the month have been large and these advances are now receiving the attention of underwear manufacturers who figured their recently named spring prices on a much lower basis. Yarns late in the summer were dull and soft as against the recent upward trend and the larger activity, much of it going with government defense buying of different types. In view of this there is already talk of underwear manufacturers advancing some of their closely priced spring numbers such as the highly competitive athletic shirts. The yarn advance is expected and in fact already has greatly stimulated coverage by the civilian buyers for the spring season of next year.

1940 Hose Shipments Under Previous Year

For the first eight months of this year shipments of all types of hosiery were 3.8 per cent under a year previous. This drop would have been even more severe had not nylon been introduced early in the year. The nylon shipments for the eight months amounted to slightly more than 1,000,000 dozen pairs which would compare with almost 25,000,000 dozen pairs of all other full-fashioned. Men's slack socks and athletic socks and anklets have made the best showing so far in 1940 in regard to shipments. In anklets a gain of almost 8 per cent was registered while shipments of athletic socks gained 3.4 per cent and in men's slack socks shipments showed a very small drop especially when compared with the decline of almost 10 per cent in men's half-hose of regular length. The poorest shipment record so far this year was in children's and infants' lines which were closely followed by ribbed goods.

Throwsters Research Institute Elects Officers

The board of governors of the Throwsters Research Institute recently elected George A. Fenton as president. Mr. Fenton is vice-president of the R. K. Laros Silk Company, Bethlehem, Pa., and succeeds as president William R. Rossmassler of the Sauquoit Silk Mfg. Co. Alfred L. Coradi of Paragon Textile Company, Altoona, Pa., was elected vice-president and Arthur G. Schautz of Grove Silk Company, Scranton, Pa., was re-elected treasurer. George A. Urlaub was re-elected executive director. New members of the board are John H. Brine of Oscar Heineman Corporation, Chicago; and Warren A. Seem of Georgetown Silk Company, Wilkes-Barre, Pa.

◆

Package Competition

Under the auspices of Modern Packaging Magazine, the annual All-America package competition will take form to reflect the past year's latest and most ingenious developments in the creation of new packages, new displays and new machinery installations. Entry in the contest is open to all designers, package suppliers, machinery manufacturers, package-using firms and others responsible for the creation of the package or display. Any number of entries by a single firm may be made.

Old Dominion maintains an art department and a creative staff for developing both individual and coordinated package designs. This service is yours without obligation.

In packaging—particularly where a line of products is concerned—"follow through" is as important as it is in a golf swing.

By coordinating the sales appeals throughout your packaging, brand impression is increased.

Through coordinated packaging, the effect of advertising is carried over from advertised to non-advertised items.

Old Dominion Box Co., Inc.
LYNCHBURG, VIRGINIA
Martinsville, Va. Charlotte, N. C. Kinston, N. C.
Winston-Salem, N. C. Burlington, N. C. Asheboro, N. C.

Style 27

LANE

HOSIERY TRUCKS

For General and Dyehouse Use

Also

Baskets for Seamers, Loopers, Ribbers and General.

W. T. LANE & BROS., Inc.
Manufacturers
Poughkeepsie **New York**

Extra value...

Extra sales...

● DuraBeau Hosiery Finishes are a product of SCHOLLER BROS., INC., Manufacturers of Textile Soaps, Softeners, Oils, Finishes; Collins and Westmoreland Sts., Philadelphia, Pa., St. Catharines, Ont., Can.

When hosiery is

Dura Beau
REG. U.S.A. AND CANADA
FINISHED

for lasting beauty— miles more wear... extra dullness... extra softness...extra fine and sheer appearance...extra resistance to snags and pulls and runs ...extra resistance to water spots.

A Herbert Daniel Hayman Illustration • Negligee From John Wanamaker, Phila.

TRENDS—YARN MARKETS

Cotton Yarns Stage Sharp Rise as Spinners Book Heavy Orders—Advance in Silk on War Developments Brings More Active Coverage by Hosiery Industry—Large Government Cloth Buying Causes Rise in Wool and in Knitting Worsted Yarns—Rayon Yarns Unchanged But Active

Philadelphia, October 16, 1940

THERE has been an advance of two to four cents in cotton knitting yarns over the month and a price advance of several cents has been placed in effect in mercerized. There have been increases in all other knitting yarns including worsted and silk while rayon remains at the old level. This means that knitters are confronted with higher yarn prices after many have just named new prices for the spring season so that it is probable they will have to make upward revisions in goods including spring cotton underwear because of this, their original prices being based on yarns at much lower levels. As prices have hardened sales of yarns of all types have been heavier so that sellers are now in possession of a large backlog and are assuming a more independent attitude for the longer term. In addition there is the question of deliveries which due to heavy government knit goods orders makes the situation in instances tight.

Cotton Yarns

There has been a sharp advance in cotton knitting yarns this month averaging two cents in carded and three cents in combed while mercerized counts are up at least three cents. The advance has been caused by a heavy volume of business placed with spinners, this being so extensive that in some sections of the market particularly in the two-ply combed manufacturers are having trouble with deliveries. At present spinners of both carded and combed yarns are well sold ahead for the balance of this year and during the last two weeks contracts have been numerous covering shipments during the first quarter of next year. In some instances knitters have placed yarn contracts this month on which deliveries will be made up until the middle of 1941. At the present time demand has fallen off somewhat, which is due to the fact that so many manufacturers have already covered as far ahead as they feel they should and it is also due to greater resistance being shown to paying the advances.

As an indication of the advance that has taken place producers of single combed yarn are quoting 30s single at 34 to 35 cents for the same spinning that a month ago was quoted at 31 to 32 cents. In the carded section spinners are now quoting 10s cones at 22 cents to 22½ cents, coming from the same spinners that a month ago were quoting around 20 cents. Although sales of knitting yarns have not been as active as in the two-ply counts such spinners are now well sold ahead and in the case of many combed yarn plants have a large backlog running into March, 1941. Single carded yarns have been the least active of all types but during the last ten days buying in this yarn has expanded sharply so that at the present time quotations of carded knitting are moving up rather sharply. Producers of supercarded are sold ahead farther than are producers of the ordinary quality carded.

Mercerized yarns have been sharply advanced due to the sharp increases which are being made almost daily in combed peeler. Large quantities of such yarns are going into government cloths of various descriptions and in addition fabrics for civilian use taking such yarns have been selling actively. Several of the largest combed spinning plants in the country are in a position where they do not care to take very much additional business and claim they are unable to deliver all the yarn now being specified by their customers. At the present time 60s two-ply mercerized ungassed is held at 66 to 68 cents and mercerizers talk of possible increases in the near future. This price compares with 61 cents reported in yarn contracts needed for Government hosiery in which severe price cutting took place. Mercerizers now claim that the 61-cent price should never have been quoted because of the tight situation in the gray yarn market. Taking this into consideration they say that mercerized yarns at 66 cents are only about 1 cent higher than what should have been the previous list.

Silk

Raw silk has advanced sharply during the last two weeks so that prices are now more than 35 cents above the level of a month ago. Heavy buying over the last ten days in anticipation of a possible embargo has resulted in the complete sale of virtually all stocks of desirable grades of raw silk held in warehouses here and in transit from Japan. Some large importers early in October withdrew all prices while others declared their lists were merely nominal since they had nothing unsold for either October or November delivery and were unwilling to quote any further ahead. Fear of possible further complications in relations between the United States and Japan brought out considerable buying of raw silk although Japanese interests in New York expressed resentment that the raw silk market was being used as a political football. They refused to be alarmed by any possibility of an embargo and at the same time asserted that no change in their policy of accepting orders for future delivery was contemplated.

Hosiery manufacturers have recently been booking fall orders in a more active manner as should be seen this time of the year. The September statistics were under expectations and amounted to only 28,800 bales. During that month imports were 7,500 bales under August and warehouse stocks declined 2,500 bales to stand at 44,400 bales at the end of September. The National Association of Hosiery Manufacturers made the comment that the hosiery industry might have to substitute high grade lisles and rayon for silk if the embargo situation became acute.

Rayon

The rayon yarn situation continues very tight with producers shipping all the yarn they can make. In view of the fact reserve stocks of the more popular counts are pretty well exhausted it is believed that monthly shipments for the rest of the current year will be smaller than during recent months when shipment totals were expanded because they included reserve stocks. Producers report that shipments during recent weeks would have been even heavier had not a considerable volume been taken out of the market by floods and labor troubles. Since stocks on hand are decidedly small at the present time producers are stressing the fact all shipments today are from current production. Some producers report themselves as sold up for November and they feel that the silk situation may shortly result in a greatly expanded demand from the hosiery industry.

Worsted Yarns

During the last month wool top futures have advanced about 20 cents which was largely caused by exceptionally large amounts of goods bought by the army to clothe the military forces. The wool trade has never been confronted with such a large demand for its product from the army in peace time. This demand coming at the same time that manufacturers were becoming busier on civilian fabrics and garments has developed what is almost a runaway market. This condition in the raw material end has been reflected in the yarn market and prices are up 8 to 10 cents from a month ago. Before the advance got very old manufacturers of outerwear covered their needs for the remainder of this year, spinners not being willing to go farther ahead than that. Outerwear manufacturers are busy and consuming yarns actively although a large percentage of this is of the cheapener variety.

A Water Softener with

EXTRA POWERS

Of all the alkalies (*uncombined*) THAUMAPHOS alone in water solution has the power to hold in *solution* the calcium and magnesium hardness.

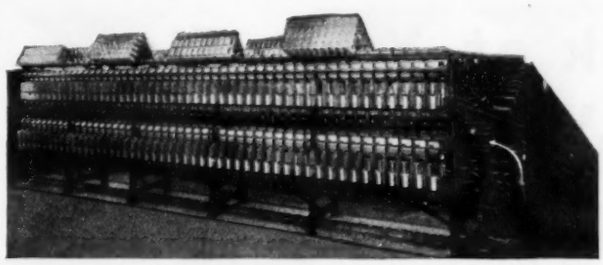
When used with alkalies that *do* form a precipitate, THAUMAPHOS peptizes the precipitate, causing the minute particles to remain in a state of suspension, and easily rinsed out, rather than to coalesce and form larger particles which drop to the bottom forming a troublesome sludge.

(In 425 lb. bbls., 125 lb. kegs, 200 lb. bags)

FREE DEMONSTRATION AT NO OBLIGATION

THAUMAPHOS
WONDERFUL PHOSPHATE
(TETRA SODIUM PYRO PHOSPHATE)

DETERGENT PRODUCTS CORP.
Division of
International Agricultural Corp.
Plants: Wales, Tenn.; East Point, Ga.; Chicago, Ill.

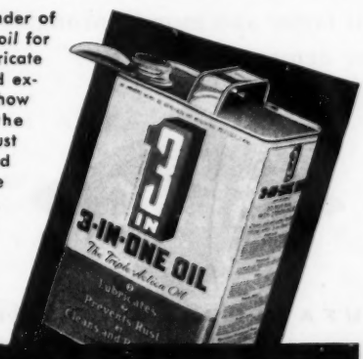


3-IN-ONE PROTECTS SPINNING MACHINES

Lubricates • Cleans • Polishes • Prevents Rust

Textile men need no reminder of the importance of the *right oil* for small parts of the many intricate machines in the mills... and experienced textile men know how "3-IN-ONE" OIL meets the needs of lubrication and rust prevention. You, too, will find 3-IN-ONE excellent for use on needles, reeds, shuttles, spindle pins, spindles, sewing machines. Ask for special MILL PRICES on "3-IN-ONE" OIL—write us.

THE A. S. BOYLE COMPANY
Distributors, Jersey City, N. J.



"3-IN-ONE" OIL

ABINGTON VACUUM CARD STRIPPING

The CLEAN way!

"It's the dirtiest job in the mill." Many a superintendent has said that about card stripping by brush. But some 500 mills which strip by Abington's 100% vacuum system have actually turned this "dirtiest job" into a source of advantage and profit!

Costs Less

In mills equipped with Abington Vacuum Stripping one man strips 225 cards 3 times daily, an average of 2 cards per minute. Cost of stripping is reduced about 60%. Furthermore, the cylinder is not stopped, which reduces card down time about 75%, adding 4% production on the average. Doubles useful life of cylinder and doffer fillets.

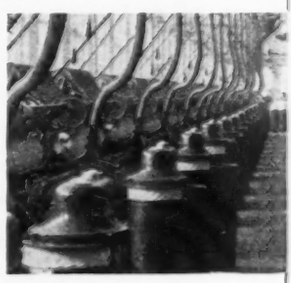
More Humane

The "dirtiest job" becomes clean and safe with Abington Vacuum Stripping. No lifting of heavy brushes. No breathing clouds of brushed-up dust and fly. No exposure of operator's hands or arms to the danger of serious accidents.

Better Quality

Abington 100% Vacuum Stripping keeps card wires in better condition than is possible where a brush runs through them several times a day. Points are sharper, bends kept more accurate. Vacuum gets out ALL the dirt and short fibres, right down to the fillet. Better wires, better cleaning, better CARDING!

In some 500 Cotton Mills



Upwards of 35,000 cotton cards use Abington Vacuum Stripping, realizing definite savings on stripping cost, brushes, belts, etc.; definite production gains; definite improvements in carding quality. We make systems for both small and large card rooms. Let us send data for your requirements.

New Book tells all
REQUEST CATALOG 40

ABINGTON

ABINGTON TEXTILE MCHY. WKS. ABINGTON, MASS.
Card Strippers — Yarn Dyeing Systems — Weaver's Knotters
OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.

Does TWO Jobs Better

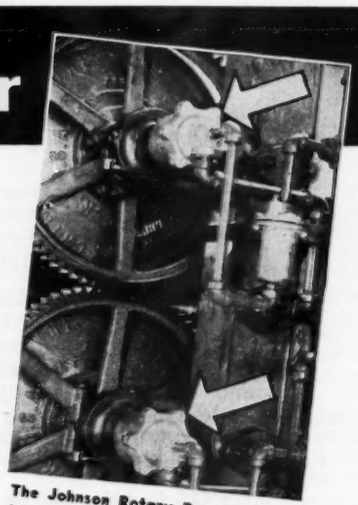
Gets steam IN— condensate OUT

THAT'S why the Johnson Rotary Pressure Joint has been able to step up production as much as 25% in scores of plants.

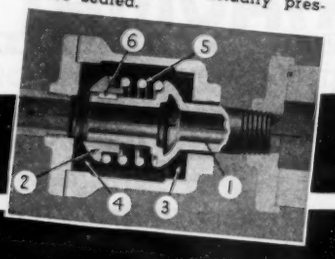
It is, first of all, a better way to admit steam into dry cans, slashers and sanforizers. It saves valuable operating time that had to be spent in inspection and maintenance of the old stuffing boxes, because the Johnson Joint is completely packless, self oiling, self adjusting and even self-aligning.

But equally important, it makes possible modern systems of roll drainage that remove all condensate air and gas, by a syphon pipe, through the same head that admits the steam. Rolls can be started without delay, roll temperatures can be higher and maintained more uniformly.

The merit of the Johnson Rotary Pressure Joint is confirmed by the many prominent manufacturers of textile machinery who now include this modern "stuffing box" as standard equipment. Why wait? You'll save enough in maintenance alone to pay the modest cost of change over.



The Johnson Rotary Pressure Joint Nipple (1), fastened to roll. Sliding collar (2), keyed (6) to nipple. Carbon-graphite rings (3) and (4) which eliminate oiling and packing. Spring (5) is for initial seating only—joint is actually pressure sealed.

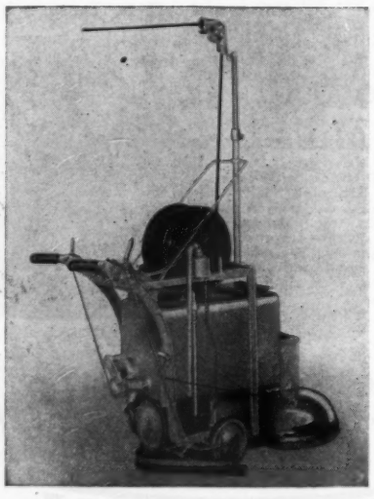


Write for newly published catalog

THE JOHNSON CORP., 815 Wood St., Three Rivers, Mich.

Johnson
Rotary PRESSURE JOINT

Get Down and Look at Your Floor Before and After LAWLOR Treatment



MODEL 20-C
Combination Scrubber and
Water Vacuum Pick-up

LAWLOR MACHINES
Manufactured by S. C. Lawlor Co.
122 No. Aberdeen St. Chicago, Ill.

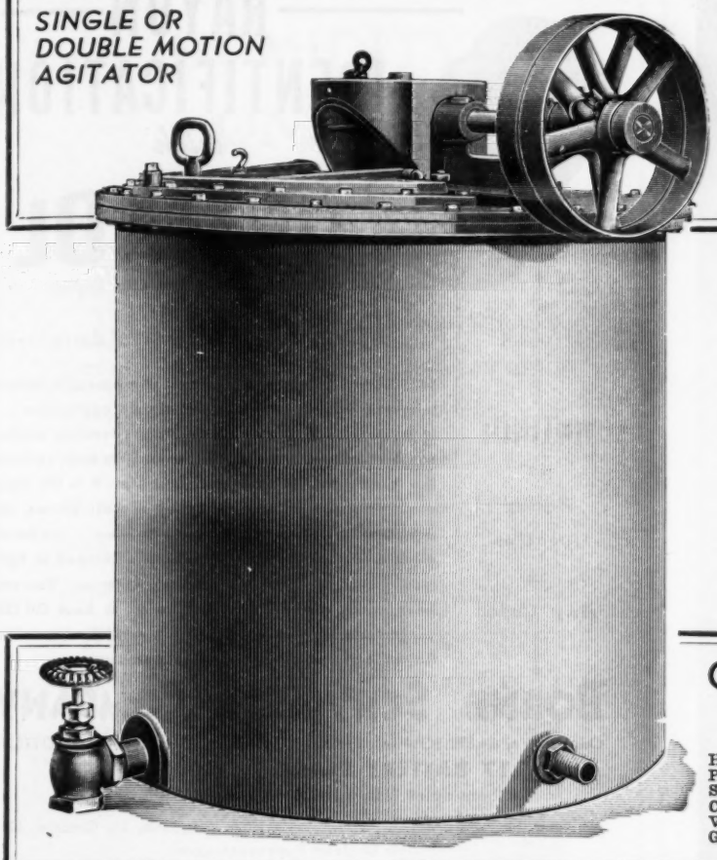
Without interrupting production, without charge or obligation, we'll come in and clean sections of your mill floor with the Lawlor machine. Then you can look at the floor and *see* how clean it is; try to slide your foot over it, and *feel* how much safer it is.

The Lawlor Model 20-C combination floor scrubber and water vacuum pick-up does a job you've been needing done, and does it faster and more thoroughly. Write, phone or wire for your demonstration.

THE SELIG CO.
QUALITY HYGIENIC SANITARY PERFECTION TRADE MARK

MANUFACTURING CHEMISTS
Established 1895
New Orleans ATLANTA, GA. Dallas, Texas

SINGLE OR DOUBLE MOTION AGITATOR



Use

GOLDENS' SIZE KETTLES

It pays to use Goldens' Size Kettles, as many of the objectionable features found in other designs have been eliminated. These improved kettles have been carefully designed under the directions of expert operating mill men. The body is cast solid of the highest quality grey iron, and all fixtures are fitted in workmanlike manner with machined joints. Our standard sizes and capacities are as follows:

CAPACITY GALLONS	HEIGHT	DIAMETER
110	32"	32"
160	36"	36"
250	42"	42"
360	48"	48"

For mixing, kettles can be furnished with stirrers, propellers or paddles, or combinations of same. For heating, Steam Jacketed Kettles can be furnished or with one or more layers of brass coils, closed or perforated.

May we send more complete information?

GOLDENS' FOUNDRY & MACHINE CO.
COLUMBUS - - GEORGIA

Also manufacturers of

Hangers
Pillow Blocks
Shaft Couplings
Cast Iron Tanks
V-Belt Sheaves
Grey Iron Castings
Ball Bearing Transmission Equipment
Ball Bearing Blower and Fan Boxes
Continuous Dyeing Machines
Raw Stock Dyeing Machines
Dye Liquor Tanks
Cast Iron Tanks
Cloth Inspecting Machines

VICTOR MILL STARCH

"THE WEAVER'S FRIEND"

- Always Uniform
- Penetrates Thoroughly
- Boils Thin
- Carries Weight Into the Fabric
- Dependable

Distributed by

CLAUDE B. ILER
Southern Agent
GREENVILLE, S. C.

J. C. ATTAWAY
GREENVILLE, S. C.

F. M. WALLACE
HOMEWOOD, BIRMINGHAM, ALA.

L. J. CASTILE
CHARLOTTE, N. C.

GUARANTEED QUALITY

The Keever Starch Company, Columbus, Ohio

US

CUT

COSTS

and Wastage

A factor of success in Textile Manufacture

US PRODUCTS have proved their ability to last longer, run smoothly, eliminating expensive interruptions, make better fabrics. For better production tomorrow, order U S bobbins, shuttles, cones, and spools today.

Ask for samples.

SATISFACTION GUARANTEED

US BOBBIN & SHUTTLE CO

GREENVILLE, S. C.

CHARLOTTE, N. C. JOHNSON CITY, TENN.

ALABAMA AGENT: Young & Vann Supply Co. Birmingham, Ala.

—RAYON—

IDENTIFICATION *with* TINTINOL

Certified Fugitive Dyes for all Synthetic Fibres and Admixtures

TINTINOL *is Ready for Use in Any Color*

TINTINOL involves the control of three essential factors in Rayon Manufacturing by one simple application .. *Moisture, Lubrication, Tinting.* ★ It imparts tenacity similar to good running cotton, produces a firm web, reduces the crunch, reduces static and split laps. It is the most convenient and economical tinting process known. *No extra handling* . . . no drying . . . no heating . . . no harsh stock or curled fibres. ★ TINTINOL is shipped in light steel drums which serve for supply reservoir. You can have *any* color by the turn of a valve. ★ Base Oil (SS) concentrate is also available for conditioning white Rayon stocks where tinting is not necessary.

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE NEW YORK

Southern Sales Manager: H. L. Siever, Charlotte, N. C.
Representatives: R. C. Young, Charlotte, N. C.
W. B. Uhler, Spartanburg, S. C. John Ferguson, La Grange, Ga.
New England Representatives:
A. M. Knight, West Yarmouth, Mass. • F. L. Ekstrand, Stafford Springs, Conn.

What's in a "COLE" VAT?

Mainly SATISFACTION

Cole's more than 80 years' experience in quality steel fabrication is a strong guarantee of your getting superior vats. Cole makes vats according to specifications from your design or from designs as furnished by our engineering department. Vats are made from quality steel, Nickel-clad and Stainless steel, Aluminum, Money metal, Lead and Tin lined, etc., for acid, NaOH storage, chemicals, dyes, etc. Other Cole products are: Bins, Kettles, Kiers, Boilers, Heavy Pressure Vessels, Tanks, Nickel-Clad and Stainless steel Vessels, Towers, and Fabricated Plate work.

Write for Tank Talk No. 29-C

R. D. COLE MANUFACTURING CO.

ESTABLISHED 1854

NEWNAN GEORGIA

HUMIDITY CONTROL *For Profits*

The need for accurate, automatic control of your humidifying system cannot be stressed too strongly. Too dry a condition means static, harsh, brittle fibres, and a generally sub-standard product through every step of the process. Too moist a condition means a lazy, "dead" fibre, and a general slowing up of working efficiency – roll lapping, etc. Right between the two is the ideal condition – money-making air!

Set – and Forget –
THE AMCO
HUMIDITY CONTROL

It's worth a lot to be able just to set your Amco Controls and *know* that the correct humidity condition will be maintained, regardless of temperature changes. Modern control may be all your system needs to bring it up to date. Let an Amco Engineer find out, without obligation. American Moistening Co., Providence, R. I. . . Boston . . Atlanta . . Charlotte

AMCO *Humidification*

Savings + Service

TIME—The New Type K cleans 50% more bobbins per minute than previous models.

SPACE—Less space for boxes, etc., is required due to increased cleaning efficiency.

MATERIAL—Improved plunger assembly prevents damage to bobbin barrels and protects the finish.

MONEY—The savings effected pay for the machine, usually in one year, always within two years.

The Terrell Bobbin Cleaning and Handling Equipment (bobbin box hoist plus conveyor) offers mills a dependable day-in and day-out bobbin cleaning service that is completely automatic, with the exception of the actual machine feeding. Full particulars will be sent on request, without obligation.

TERRELL CONVEYOR SYSTEM
EFFICIENT BOBBIN CLEANING

The **Terrell Machine Co.,** *Inc.*

CHARLOTTE, N. C.

Luther Pilling, Danielson, Conn. . . . . N. E. & Canada
E. W. S. Jasper, Inc., Elizabeth, N. J. . . . Penn. & N. J.
Geo. Thomas & Co., Manchester, Eng. . . . European Agt.

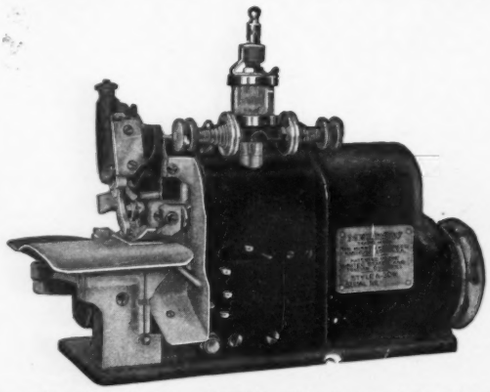
Established 1838

TRADE MARK
MERROW

Incorporated 1894

For Overseaming and Overedging with maximum efficiency at high speed and low operating cost modernize with the new

MERROW CLASS A MACHINES



Also Plain Crochet and Shell Stitch Models for Ornamental Edge Finishing and Class 60 Machines for Butt Seaming.

—200 VARIETIES FOR 200 PURPOSES—

Write for details and let us demonstrate these machines on your own fabrics.

THE MERROW MACHINE COMPANY

Starting Its Second Century

2805 LAUREL STREET HARTFORD, CONN., U. S. A.

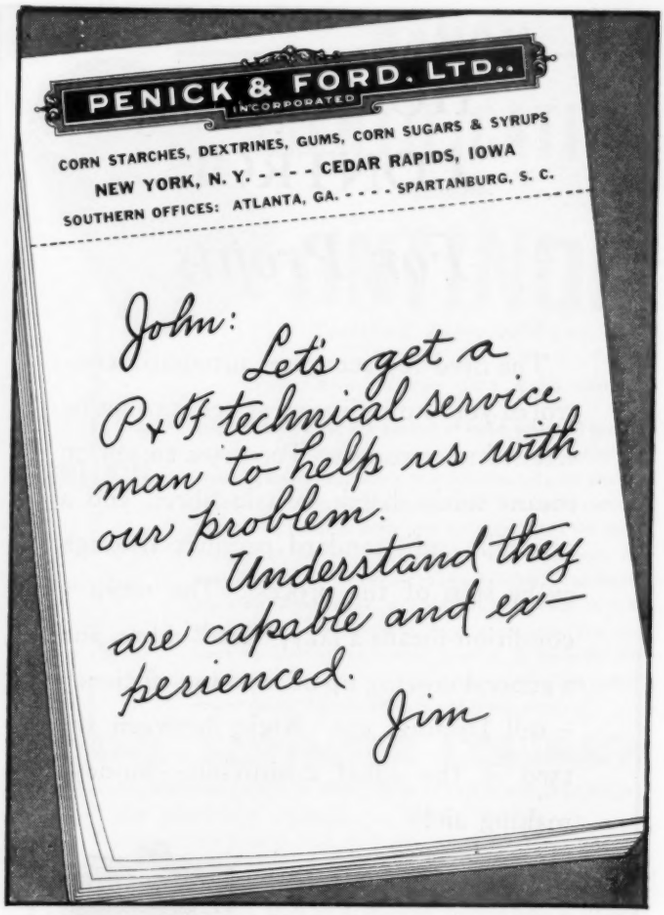
E. W. HOLLISTER, P. O. Box 721, SPARTANBURG, S. C. R. B. MORELAND, P. O. Box 895, ATLANTA, GEORGIA

PENICK & FORD, LTD.,
INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.



AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

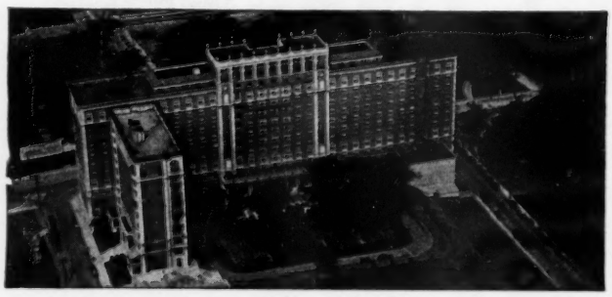
Write us and let us quote you on anything from a postal card to a fully bound book.

The A. J. Showalter Co.

Printers and Publishers

Dalton Georgia

The Most Looked-up-to Address In ATLANTA



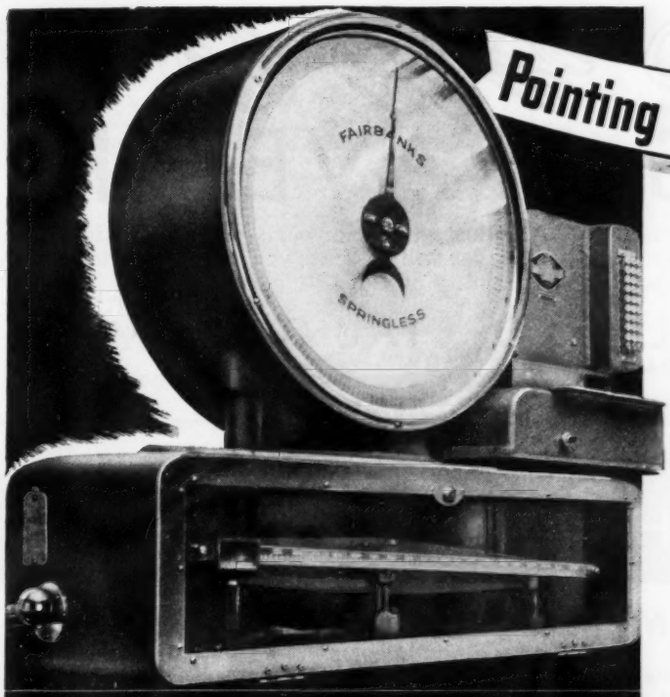
For Comfort and Convenience

Living up to its name, the Atlanta Biltmore offers the finest in accommodations without premium—courteous and efficient service—Conveniently located for restful sleep.

600 outside rooms, each with bath . . . convenient parking and garage accommodations . . . popular prices throughout.

RATES FROM $3

ATLANTA BILTMORE



Pointing the WEIGH around the World

THE extent to which Fairbanks Dial Scales contribute to modern methods in commerce and industry is, in itself, the finest tribute that could be paid to their long life and dependable accuracy. In steel mills and coal mines, in factories and warehouses, in shipping rooms and railway terminals, in textile mills and cotton gins, in printing plants, packing houses, dairies, and, as a matter of fact, in *every* kind of industrial operation in every civilized country, Fairbanks Dial Scales point the *weigh*.

If you have a weighing problem, simple or complex, the organization that made Fairbanks the greatest name in weighing welcomes the opportunity to help you solve it. Fairbanks, Morse & Co., Dept. 18, 600 S. Michigan Ave., Chicago, Illinois. Branches and service stations throughout the United States and Canada.

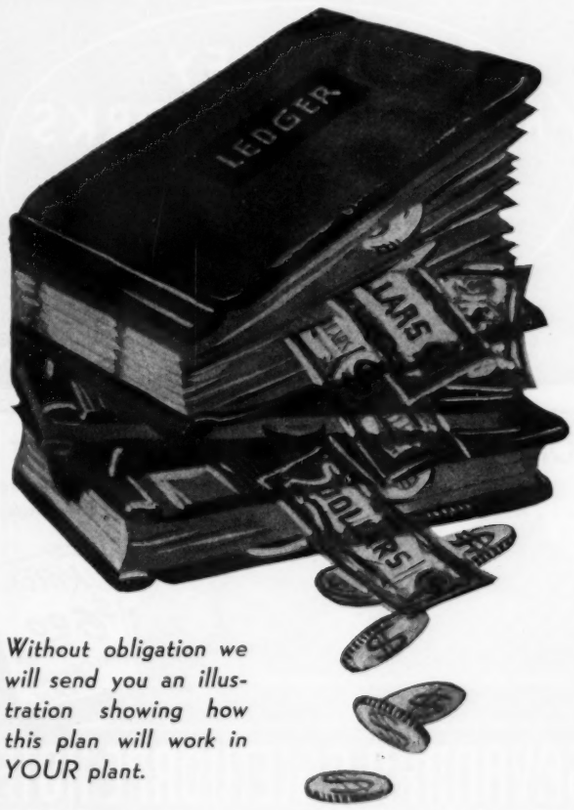
7706-SA40.82

FAIRBANKS-MORSE

DIESEL ENGINES · PUMPS · ELECTRICAL MACHINERY · FAIRBANKS SCALES · RAILROAD EQUIPMENT · WATER SYSTEMS · WASHERS-IRONERS · FARM EQUIPMENT · STOKERS · AIR CONDITIONERS

FAIRBANKS SCALES

Scales



Without obligation we will send you an illustration showing how this plan will work in YOUR plant.

FINANCIAL LOSS

Invisible and Unnecessary
May be Caused YOU by the
Condition of Your Employees

Because they are in poor physical condition or worried over ills, or doctor or hospital bills, your employees frequently are inefficient—a condition that reduces your profits.

At no cost whatever to Management, the Protective Plan operates in a great many leading Southern plants to remove these causes of inefficiency—and substantially increase the owner's profits. GET THE FACTS! The Protective Plan will do the same for you!

PROTECTIVE LIFE
INSURANCE COMPANY
WILLIAM J. RUSHTON PRESIDENT
BIRMINGHAM ALABAMA

DARY RING TRAVELERS

If you are having the slightest spinning trouble, any of our representatives, who are men thoroughly experienced in this branch of the textile industry, are at your service at all times. A trial order will convince you of the superiority and durability of Dary Ring Travelers.

THE DARY RING TRAVELER CO., TAUNTON, MASS.

B. G. DARY, Treasurer

JOHN H. O'NEILL, Box 720, ATLANTA, GA. JOHN E. HUMPHRIES, Box 843, GREENVILLE, S. C.
H. REID LOCKMAN, Box 515, SPARTANBURG, S. C.

Specify ROBBINS HARDWOOD FLOORING

Wisconsin-Michigan Hard Maple--- MFMA --- Unexcelled for Industrial Uses

Represented exclusively in the Southeast by Bright Brooks Lumber Co.—*Main Office:* Savannah, Ga.
Branches: Charlotte, N. C., Mr. Geo. Roberts, and Atlanta, Ga., Mr. Ray Cook.
In New York and New England, by T. M. Ralston, New York City.
In Philadelphia, by Geo. Lippincott.

Write them--or write us direct

MAPLE BIRCH

ROBBINS FLOORING COMPANY

Rhinelander, Wisconsin

BEECH OAK

The *Safest* Tools *are the* Fastest Tools

Cut down fixing time *safely* with Snap-on textile tool equipment . . . be prepared to handle all machine adjustments in the shortest possible time by being properly equipped with the right tool for every job. Rid your tool kits of worn-out, obsolete wrenches and hand tools. Replace them with quality built Snap-ons. This BO-68 Set of set screw wrenches includes sizes 1/16" to 5/16" . . . all wrench openings are accurately milled to fit snugly around the set screw head and prevent all danger of slipping . . . handles are just the right length for comfortable grip and proper leverage. Make Snap-on your tool headquarters.

STANDARD AND SPECIAL WRENCHES AND HAND TOOLS *for* LOOM..... SPINNING.... TWISTER..... SPOOLER.... CARD ROOM FRAME..... OPENING & PICKER.... FIXERS *also* MACHINE SHOPS AND GEN. UTILITY

Warehouse Stocks Carried in All Textile Districts

WRITE FOR SPECIAL TEXTILE TOOL FOLDER

Snap-on Specialized TEXTILE TOOLS

Snap-on Tools Corporation
Dept. "C-9" Kenosha, Wisconsin

TELEPHONE 729 WORKS: N. MARIETTA ST.

BARKLEY MACHINE WORKS

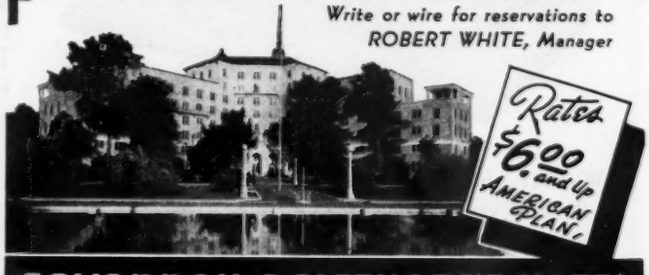
MANUFACTURERS OF

TEXTILE MACHINERY PARTS

GASTONIA, NORTH CAROLINA

FOR THOSE WHO INSIST ON THE BEST »

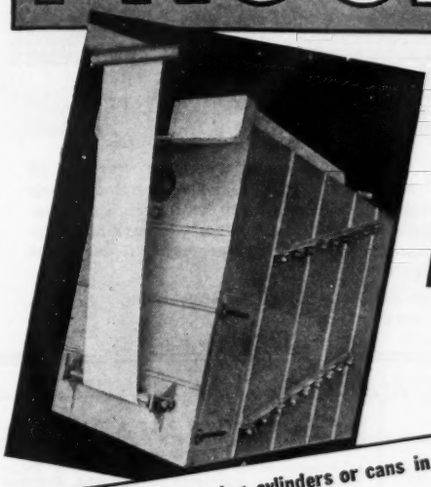
Write or wire for reservations to ROBERT WHITE, Manager



SAVANNAH OGLETHORPE HOTEL

WILMINGTON ISLAND SAVANNAH, GEORGIA

PROCTOR



ROLLER TYPE DRYER

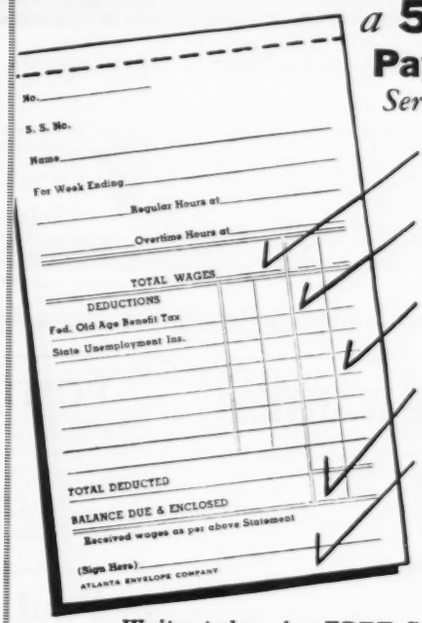
- Replaces drying cylinders or cans in the drying of many types of piece goods.
- Has individually motor-driven rolls that adjust automatically to the speed the fabric is fed.
- Rapidity of drying means only short exposure of the fabric to the drying medium.
- There is a minimum of tension on the goods warpwise and no tension at all on the filling.
- In addition, there is no narrowing or wrinkling of the fabric and important savings are realized.

PROCTOR & SCHWARTZ, INC., PHILA.

Versatile NEW MEMBER *for* YOUR ACCOUNTING STAFF

a **5 in 1 Pay Envelope**

Serving as---



1. A statement of wages, hours, and deductions for the employee as required by law.
2. A permanent Social Security record for the employer.
3. A strong payroll envelope.
4. A permanent Wage-Hour record for the employer.
5. A signed receipt from the employee covering wages paid, hours worked, etc., for employer's permanent file.

ALSO TIP-ON-VELOPE *with carbon*

Write, today, for FREE SAMPLES

ATLANTA ENVELOPE COMPANY

505-11 STEWART AVENUE, S. W.

ATLANTA, GEORGIA

THE FORMULA FOR SUCCESSFUL SIZING

SKILL, EXPERIENCE AND

Kali

SIZES

•

HYDROXY* SIZES

—for acetate, viscose or Bemberg warps.

—in dry granular form or solid form, as you prefer.

•

Tell us what your sizing problems are. We will help you find the best for your needs.

KALI MANUFACTURING CO.

Manufacturing Chemists

1410 North Front Street Philadelphia, Pa.

ECONOMY TIP—

Save Real Money ON COTTON STORAGE *with Economy Lifters*

Economy Lift in Action—

Mills can save money, time and labor during the cotton storage season with an Economy Lifter doing the work.

Standard Lifters can be built in any capacity up to 5,000 pounds while special machines can be designed for any service. Cotton stackers, loom beam machines and other types designed for the textile industry.

The Telescoper is especially designed for working under saw tooth roofs, warehouse ceilings, beams, doorways, varying its height to suit the job.

The same machines can be used throughout the year with a definite saving in loading cloth into freight cars, overhead maintenance and repairs. Power costs are low and models are available for every textile usage.

Write TODAY for Full Information

ECONOMY ENGINEERING CO.

2665 West Van Buren St., Chicago, Ill.

CLASSIFIED ADS

BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES

DISPLAY RATES

Rates are net, payable in advance each month. No commission or discounts. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches. Rates based on the total space used in one year.

	Per Inch		Per Inch
1 inch	$5.00	13 inches	$4.20
3 inches	4.80	20 inches	4.00
6 inches	4.60	50 inches	3.80
10 inches	4.40	100 inches	3.00

UNDISPLAYED

Advertisements set "want ad style." Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, for rent or wanted and professional cards are accepted at display rate only.

Box number address care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

SITUATION WANTED

After holding the position of Mechanical Superintendent at Massachusetts Knitting Mills for the last 12 years, I wish to make a change for economic reasons and am looking for a position in the same or a similar capacity. I have worked in the full-fashioned machine and hosiery industry from boyhood, am a trained machinist, have erected machines abroad and a number of years for Alfred Hofmann, Inc. References as to qualifications and character will be furnished by Massachusetts Knitting Mills, Alfred Hofmann, Inc., and Max C. Miller. Address Felix Scheller, 15 Prince St., Jamaica Plain, Massachusetts.

POSITION OPEN

Position offered to young man (single) with knowledge of plant Sewing Cotton Industry, including dyeing (Not Spinning), who is willing to go to South Africa on 2 years contract. State particulars to Henry Brown c/o African Export Corp., 200 West 34th Street, New York.

POSITION WANTED

As Superintendent or Overseer of Yarn or Twine Mill. 18 years experience on Spinning, Brownell Twisting, Ring Twisting, Winding and Spooling. Age 33, married, sober, I.C.S. course on cotton carding and spinning. Good references. Can go anywhere. Address Box 512, care COTTON, Grant Building, Atlanta, Ga.

Paul B. Eaton

PATENT ATTORNEY

1408 Johnston Bldg., Charlotte, N. C.

514 Munsey Bldg., Washington, D. C.

Former Member Examining Corps

U. S. Patent Office

HYGROLIT MACHINES

For Sale, two Patent Hygrolit Yarn Conditioning Machines, Model AAAY, purchased new June 1934. Operated only three to four years . In excellent condition. Address Box 513, care COTTON, Grant Bldg., Atlanta, Ga.

FINISHING MATERIALS

A complete . . . up-to-date . . . more practical . . . and enlarged Handbook for Finishers

THE first edition of "Finishing Materials" was so well accepted and appreciated throughout the finishing industry, that it was necessary to produce a second edition. In this new edition, a number of subsequent articles by the author, J. Andrew Clark, were added to the original book; thus broadening its scope and making it even more useful to Finishers.

All of the material—both original and new—provides a source of unique information and experience to the operating executive. It is fresh, up-to-date and most practical for use in everyday plant operation. In general, the book now covers those basic raw materials used in the finishing processes for cotton piece goods and newly added chapters dealing with the most recent developments in permanent finishes, bleaching, mercerization, laboratory work, etc. In addition, it includes newer materials and practices not found in standard text books.

In connection with a discussion of the uses of these materials in the plants the author has interestingly rendered something of the source, background and production of these finishing agents.

All of this information is now available in this second edition, in convenient book form, bound in durable red imitation leather. Finishers will welcome its many practical uses. It contains 55 more pages than the original volume—168 pages in all—and is well illustrated.

"Finishing Materials" can be obtained only in conjunction with a 3-year subscription to "Cotton" for $3.00 (Canada $4.50—Foreign $5.00).

COTTON

1020 GRANT BLDG. ATLANTA, GA.

Your Advertisement on This Page

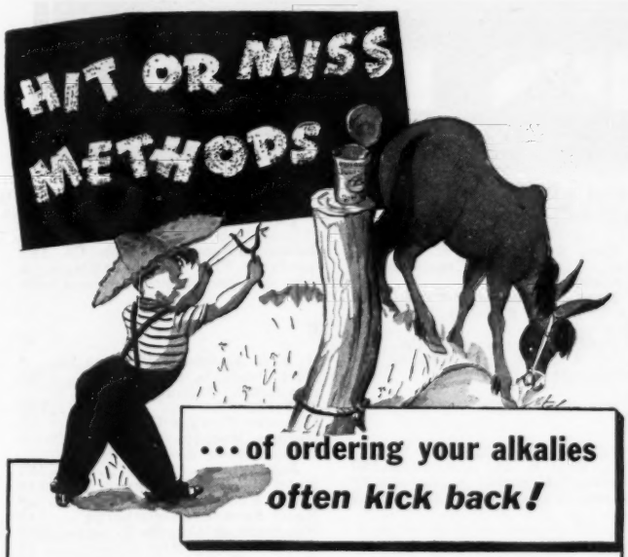
will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 12,300 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

Note the rates above and send in your advertisement today.

COTTON

GRANT BLDG. ATLANTA, GA.



• • • of ordering your alkalies *often kick back!*

• • • but when you use Solvay Alkalies in the manufacture of your textile products you can depend on their high quality . . . depend on their constant uniformity *at all times.*

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:

Boston Charlotte Chicago Cincinnati Cleveland Detroit
New Orleans New York Philadelphia Pittsburgh St. Louis Syracuse

SOLVAY ALKALIES

Bids on 20,000,000 Yds., 8.2-oz. Cotton Asked by Army
Army Seeks Bids on 400,000 One-Piece Denim Working Suits
Soldiers' Wool Needs Offer Relatively Heavy
Ask Bids to Make ,000 Field Caps
Army Contracts for 2,000,000 Yards of Cotton Tan
Linen Webbing Bids Sought by Air Corps
Navy Seeks For Va
ASKS BIDS MILLION

Upon PRODUCTION depends their safety and success

"Delivery in 120 days" is being specified on some of these textile defense orders. In your plans to achieve maximum production immediately, bear in mind that the various designs of DIAMOND FINISH rings offer a quick, low-cost means for boosting production substantially. For twisting cotton, rayon, silk and worsted, as well as cotton and wool spinning, let us help you plan the added production you need.

WE MAKE ALL TYPES OF HOLDERS

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

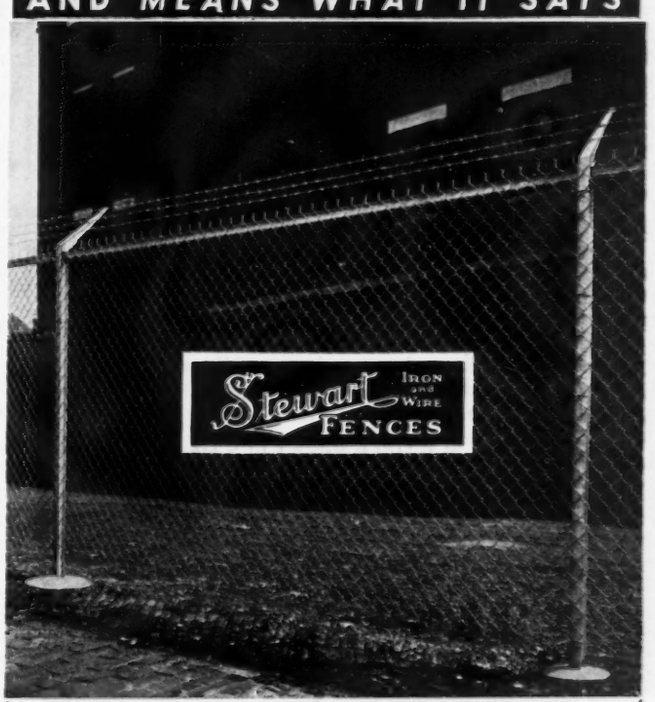
Makers of Spinning and Twister Rings since 1873

Southern Representative H. ROSS BROCK, 3 Vanney St., Greenville, S. C. Tel. 2824

DRONSFIELD'S PATENT ATLAS BRAND EMERY FILLET

STOCKED BY
THE PRINCIPAL MILL SUPPLY HOUSES AND CARD MAKERS

A FENCE THAT SAYS "KEEP OUT" AND *MEANS WHAT IT SAYS*



Catalog showing many typical installations and giving complete details on exclusive structural superiorities sent on request. Sales and erection offices in all principal cities.

THE STEWART IRON WORKS CO., INC.
724 STEWART BLOCK CINCINNATI, OHIO
"World's Greatest Fence Builders Since 1886"

ADVERTISER'S INDEX

The Advertisers' Index is published as a convenience, and not as a part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

A

Abington Textile Machinery Works 141
Abbott Machine Co. ..... *
Albany Felt Co. Inside Back Cover
Aldrich Machine Works 26
Allis-Chalmers Mfg. Co. 27
Aluminum Co. of America 127
American Air Filter Co. 17
American Aniline Products, Inc. *
American Cyanamid & Chem. Corp. 89
American Magnesium Corp. .. 36
American Moistening Co. 145
American Monorail Co. 40
American Yarn & Processing Co. 135
Arkansas Company, Inc. 125
Arguto Oilless Bearing Co. 154
Armstrong Cork Co. 73
Arnold Hoffman & Co., Inc. .. *
Ashworth Bros., Inc. ..... *
Atlanta Envelope Co. 149

B

Barber Colman Co. 93
Barkley Machine Works 148
Barnes Textile Associates, Inc. *
Becco Sales Corp. ..... *
Benjamin Elec. Mfg. Co. ..... *
Bond Co., Chas. 91
Borne, Scrymser Co. 144
Boston Woven Hose & Rubber Co. ..... *
Bowen-Hunter Bobbin Co. 24
Boyle Co., Inc., A. S. 141
Brinton Co., H. 137
Brown Instrument Co. 30
Bunting Brass & Bronze Co... *
Burkart-Schier Chemical Co...152
Butterworth & Sons Co., H. W. *

C

Cameron Machine Co. ..... *
Centrif-Air Mch. Co., Inc. .... *
Ciba Company 44
Classified Ads 150
Cleveland Tramrail Division .. *
Clinton Co. ..... *
Cole Mfg. Co., R. D. 144
Colgate-Palmolive-Peet Co. ... *
Commercial Factors Corp. .. ..Inside Front Cover
Continental-Diamond Fibre Co. *
Corn Products Sales Co. ..... *
Curtis & Marble Machine Co. .153

D

Darnell Corp., Ltd. 137
Dayton Rubber Mfg. Co. 15
Dary Ring Traveler Co. 148
Detergent Products Corp. 141
Detex Watchclock Corp. 154
Diamond Alkali Co. ..... *
Dommerich & Co., L. F. 38
Dow Chemical Co. 8
Draper Corporation 1
Dronsfield Bros., Ltd. 151
Du Pont de Nemours & Co., Inc., E. I., Dyestuffs Division ..... *
Du Pont de Nemours & Co., Inc., E. I., Fine Chemicals Division ..... *
Du Pont de Nemours & Co., Inc., E. I., Finishes Division 39
Du Pont de Nemours & Co., Inc., E. I., R. & H. Chemicals Dept. ..... *

E

Eaton, Paul B. 150
Economy Baler Co. 98
Economy Engineering Co. ...149

F

Fafnir Bearing Co. ..... *
Fairbanks, Morse & Co. 147
Fidelity Machine Co. 137
Finnell System, Inc. 85
Foster Machine Co. ..... *
Franklin Process Co. ..... *

G

Gates Rubber Co. ..... *
Gaylord Container Corp. ..... *
General Coal Co. ..... *
General Dyestuffs Corp. ..... *
General Electric Co. ..20 and 21
General Electric Co. (Lamps) 10
Gill Leather Company ..... *
Goldens Foundry & Mch. Co..143
Goodyear Tire & Rubber Co... 4
Gulf Oil Corporation 19

H

H & B American Machine Co. *
Hart Products Corp. 98
Henderson Foundry & Mch. Works 152
Hercules Powder Co., Inc. ... 25
Hermas Machine Co. ..... *
Hetherington & Sons, Inc., John 151
Hotel Atlanta Biltmore 146
Hotel Claridge ..... *
Hotel Savannah-Oglethorpe ...148
Houghton & Co., E. F. 105
Howard Bros. Mfg. Co. 16
Hunter Machine Co., James .. 12
Hyatt Bearings Division 87

I

International Nickel Co., Inc. *

J

Johnson Bronze Co. 83
Johnson Corporation 142

K

Kali Mfg. Co. 149
Kaumagraph Co. 29

SOLUBLE PINE OILS

FOR TEXTILE WET PROCESSING

BURK-SCHIER SOLUBLE PINE OILS are stable, well-balanced compounds of Yarmor 302 Pine Oil with carefully selected solubilizing or emulsifying agents.

Textile Chemists and Colorists have found BURK-SCHIER SOLUBLE PINE OILS to be valuable aids in conducting the wet-processing operations of Wetting, Scouring, Bleaching and Dyeing. They may be applied to all fibers or fabrics.

BURK-SCHIER SOLUBLE PINE OILS are available in any desired strength or concentration. Complete data and samples will be furnished upon request.

BURKART-SCHIER CHEMICAL CO.

CHATTANOOGA, TENNESSEE

MANUFACTURING CHEMISTS FOR THE TEXTILE INDUSTRY

Henderson TEXTILE Repair Parts

THEY last longer because they are reinforced at the places where ordinary parts break.

They fit more accurately and operate more smoothly at higher speeds because they are made from precision patterns by expert workmen.

Write today for prices.

HENDERSON FOUNDRY & MACHINE WORKS
HAMPTON, GEORGIA

ADVERTISER'S INDEX

The Advertisers' Index is published as a convenience, and not as a part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

Keever Starch Co. 143
Kempton Parts & Spring Co. .154

L

Lane & Bros., Inc., W. T. 139
Laurel Soap Mfg. Co. ..... *
Lawlor Co., S. C. 142
Link Belt Company ..... *
Loper Co., Ralph E. 154
Lunkenheimer Co. ..... *

M

Manhattan Rubber Mfg. Co. Division 37
Maple Flooring Manufacturers Asso. 7
Marquette Metal Products Co.. *
Mathieson Alkali Works, Inc.. *
Meese, Inc. ..... *
Merrow Machine Co. 146
Morton Salt Co. 154

N

National Aniline & Chemical Co., Inc. 79
National Oil Products Co. ...107
National Ring Traveler Co. .. 98
New Departure Division 6
New York & New Jersey Lubricant Co. 105
North, Inc., Frank G. ..... *

O

Old Dominion Box Co. 139
Onyx Oil & Chemical Co. .... *

P

Pabst Sales Company 108
Parks-Cramer Co. 91
Pawtucket Spinning Ring Co.. 81
Penick & Ford, Ltd., Inc. ...146
Pennsylvania Salt Mfg. Co. ... *
Perkins & Sons, Inc., B. F. ...111
Pittsburgh Corning Corp. 13
Proctor & Schwartz, Inc. 107-149
Protective Life Insurance Co..147
Provident Life & Accident Insurance Co. .....Front Cover
Pure Oil Co. 154

R

Reeves Pulley Co. ..... *
Reliance Electric & Eng'g Co. *
Republic Steel Corp. 46
Rhoads & Sons, J. E. ..... *
Rice Dobby Chain Co. ..... *
Robbins Flooring Co. 148
Rochester Eng'g & Centrifugal Corp. ..... *
Rockwood Mfg. Co. ..... *
Rohm & Haas Co. 22
Royce Chemical Co. ..Back Cover

S

Saco-Lowell Shops 9
Scholler Bros., Inc 139
Scott & Williams, Inc. 112
Selig Company 142
Seydel, Woolley & Co. ..... *
Showalter Printing Co., A. J...146
Singer Sewing Mch. Co. 77
Sirrine & Co., J. E. 154
S. K. F. Industries, Inc. .... *
Snap-On Tool Corp. 148
Socony-Vacuum Oil Co., Inc. 34-35
Solvay Sales Corp. 151
Sonoco Products Co. 94
Southern Belting Co. 33
Staley Mfg. Co., A. E..... 32
Standard-Coosa-Thatcher Co. .. *
Standard Oil Co., Inc., of Kentucky 23
Standard Pressed Steel Co. .. 31
Standard Silicate Division ... *
Steel Heddle Mfg. Co. ..... *
Stein, Hall & Co., Inc. ..... *
Stewart Iron Works Co., Inc...151
Sturtevant Co., B. F. ..... *

T

Tennessee Eastman Corp. 97
Terrell Machine Co. 145
Texas Co. 2
Textile Finishing Mchry. Co... *
Textile Hall 28
Textile Industry Research ...153
Textile Machine Works 115 & 117
Thomas & Skinner Steel Products Co. 137
Three-In-One Oil 141
Tide-Water Associated Oil Co. *
Torrington Co. .....129 and 130
Trust Company of Georgia ... 71
Tubize-Chatillon Corp. ..... *

U

Union Special Machine Co. .... *
Universal Winding Co. 11
U. S. Bobbin & Shuttle Co. ..144
U. S. Ring Traveler Co. 18

V

Veeder-Root, Inc. ..... *
Victor Ring Traveler Co. .... *

W

Wallerstein Co., Inc. 154
Want Ads 150
Warner Chemical Co. 3
Westinghouse Electric & Mfg. Co. .....42 and 43
West Point Foundry & Mch. Co. 75
Whitin Machine Works 5
Whitinsville Spinning Ring Co.151
Wildman Mfg. Co. 123
Willcox & Gibbs Sewing Mch. Co. 133
Wolf & Co., Jacques 14

T I R

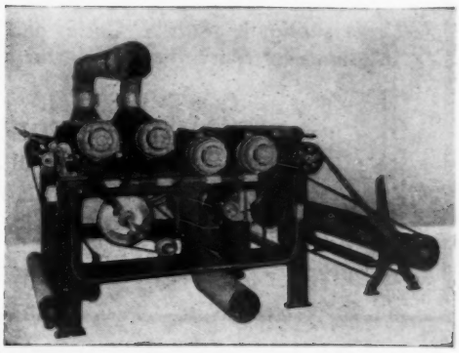
INCREASING demands for national defense make up-to-the minute production methods and efficient operating conditions of highest importance.

Our ten years' experience, as consulting engineers in more than one hundred mills all over the world, qualifies us to assist you in solving questions of this nature.

We would welcome an opportunity to discuss with you any problems in the field of our activity without obligation on your part.

TEXTILE INDUSTRY RESEARCH
INCORPORATED
11 WEST 42nd STREET
NEW YORK, N. Y.

for BETTER and FASTER SHEARING



TYPE CMR AUTOMATIC SHEAR

for Spun Rayons, Rayons, Cottons and Silks

- Patented Automatic Seam Protector
- Built-in Motors for the Cutters
- Improved Built-in "Vibrate" Motion
- Adjustable Selvage Cones, Etc., Etc.

Over 150 of this latest type are now giving superior results in many mills. . . Write or wire us for further details.

URCTIS & MARBLE MACHINE CO.
WORCESTER, MASS.
SOUTHERN OFFICE: 1000 Woodside Building, Greenville, S. C.

DETEX

WATCHMEN'S CLOCKS

DETEX WATCHCLOCK CORPORATION

406 Glenn Building, Atlanta, Ga.

1203 Liberty Life Building • Charlotte, N. C.

NEW YORK • CHICAGO • BOSTON • ATLANTA

DE-SIZING COSTS ARE LOWER when you use

FOR COTTONS, RAYONS AND MIXED GOODS

WALLERSTEIN COMPANY, INC. 180 MADISON AV. NEW YORK

RAPIDASE

Arguto NON-METALLIC

20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."

—unsolicited testimonial

ARGUTO OILLESS BEARING CO.

Wayne Junction, Philadelphia, Pa.

J. E. SIRRINE & COMPANY

Engineers

Appraisals; Consultation; Design; Estimates; Hydro-Electric and Steam Power Plants; Paper and Pulp Mills; Water; Waste Disposal; Plans, Specifications and Supervision; Steam Utilization; Textile Mills.

GREENVILLE SOUTH CAROLINA

RALPH E. LOPER CO.

INDUSTRIAL ENGINEERS

Specializing in Textile Costs and Operating Methods for More Than a Quarter of a Century

COST SYSTEMS
WORK LOAD STUDIES
PAY ROLL CONTROLS
COST REDUCTION SURVEYS
SPECIAL REPORTS

FALL RIVER, MASS. GREENVILLE, S. C.

"The Roving Frame"

by Fay H. Martin

Every carder, frame fixer, section man, and superintendent will find "The Roving Frame," by Fay H. Martin, an instructive pamphlet. Mr. Martin, who has long written articles for "Cotton", clearly interprets draft, twist, lay, tension, pressure of the presser, hyperbola curve, the winding of the bobbin, reverse twist on the roving frame, roving frame cones, tensions and compounds so that the student or practical man will profit by his explanations. This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Cotton," containing valuable information, illustrations, tables, charts and diagrams.

Fay H. Martin is a recognized authority on the roving frame. This book has been adopted by textile schools and vocational schools. Price per copy $1.00 (or it may be secured in conjunction with a 3-year subscription to "Cotton" for $2.50 (Canada $4.00—Foreign $5.50).

COTTON, Grant Bldg., ATLANTA, GA.

THE PURE

PURE THREE POINT LUBRICATION

A Complete Line of Industrial Petroleum Products

THE PURE OIL COMPANY U.S.A. PURE

A Pure Oil engineer will help solve your lubrication problems. Write today.

OIL CO.

CHICAGO U.S.A.

Morton Salt Co. Chicago, Ill.

HEAT FAG

WORKERS WHO *Sweat* NEED *Salt*

• USE MORTON'S SALT TABLETS •

FLAT & COILED SPRINGS—METAL STAMPINGS
FORMED WIRE GUIDES—BEARINGS—BUSHINGS
SCREWS—NUTS—STUDS—ANY SPECIAL PARTS

KEMPTON PARTS & SPRING CO.

224 WEST MAIN ST., GASTONIA, N. C.

ALBANY SLASHER CLOTH

for

Longer Life
Lasting Cushion
Uniform Penetration

ALBANY has pioneered again by developing special, heat resisting, slasher cloths that give long life and retain superior resiliency during operation. Carefully selected wools, expertly blended, assure uniform size penetration.

ALBANY FELT CO. ALBANY NEW YORK

Addressing

AN 83 LETTER WORD

83 SANFORIZERS U.S.A.

➡ IT BRANDS a *specialized* type of *finishing oil* . . today's Public Demand No. 1 for producing a *Sanforized* Finish, with modern types of cotton finishing equipment.

➡ VELV-O-RAY accomplishes both the absorbency and flexibility of the treated fabric which is so vitally essential to *correct* and *uniform* shrinkage.

★ *VELV-O-RAY . . an All-Purpose Oil has developed noteworthy effects in softening and finishing the widest range of fibres and their varied mixtures.*

TAKE OUR WORD . .

. . for surprising Results!

VELV-O-RAY

ROYCE

CHEMICAL COMPANY

Chemical Manufacturers

CARLTON HILL NEW JERSEY

VELV-O-RAY